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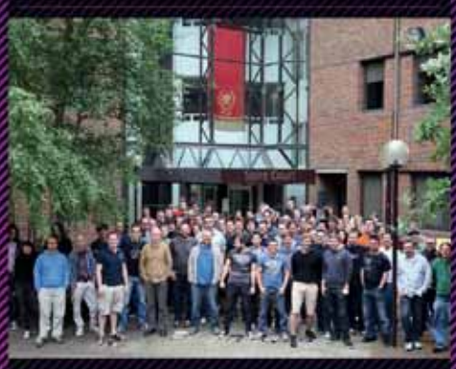

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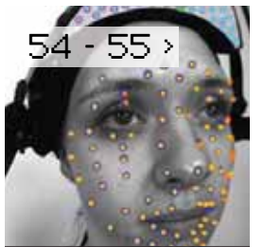
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EDITORIAL

TROLLED NEWS

THE FACT THAT otherwise pleasant people can assume the guise of rude, aggressive louts when inhabiting their Twitter persona is nothing new.

Long before the microblogging site burst into life, forums, MUDs and other early community sites proved how intolerable a person can be when protected by the veil the internet seems to drape over many users.

But recently, what games developers have had to endure from their supposed fans is growing increasingly nasty, and sometimes having a dismaying impact on the very act of creating games. As I write, Phil Fish has just announced his departure from games development and the canning of *Fez 2* in response to growing tired of his – largely online – treatment. And a week previously, Treyarch game design director David Vonderhaar endured death threats after announcing some rebalancing of *Call of Duty: Black Ops II's* online multiplayer.

I don't know Fish, but it's suggested he's no wilting lily. Still, whatever his online attitude – and if the canning isn't but a savvy PR move for a game that will suddenly return – it's a shame that a potentially great game currently isn't happening because people online can be truly unpleasant.

And while Vonderhaar's experience pales in comparison to the recent treatment on Twitter of feminist Caroline Criado-Perez, his recent experience of being a high-profile developer is hardly going to be one that encourages the next generation of talent to make it to the top.

But before we criticise too harshly, we should all look at ourselves. There are developers, journalists and many others out there with little time for pleasantries online. I say let's lead by example.

Will Freeman
will.freeman@intentmedia.co.uk

Will

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Your next devkit

Cautiously optimistic indies respond to Microsoft's new Xbox One self-publishing policy, as console is revealed as development kit

Good or bad, the Xbox One (main image) has attracted plenty of attention. Above: Adam Sawkins of ProjectorGames (top) and Bossa Studios' Imre Jele (bottom)

by Will Freeman

INDEPENDENT DEVELOPERS HAVE reacted with cautious optimism to the fact that Microsoft will now allow self-publishing on the Xbox One, which will also be able to function as a devkit.

After Microsoft initially revealed the console as a machine that would not allow for self-publishing – causing much umbrage amongst the indie community – the company has now issued a statement from Xbox Corporate VP Marc Whitten that confirmed a previously rumoured U-turn on the policy.

"Our vision is that every person can be a creator. That every Xbox One can be used for development. That every game and experience can take advantage of all of the features of Xbox One and Xbox Live," said Whitten, in the statement Microsoft shared with *Develop*. "This means self-publishing. This means Kinect, the cloud, achievements. This means great discoverability on Xbox Live."

ALL IN THE DETAILS

As a result numerous indies have expressed a new optimism towards the Xbox One, though many are calling for more detail, which is expected to come during this month's Gamescom in Germany.

"I am itching to get my fingers on a machine with that much power," Adam Sawkins of ProjectorGames told *Develop* in response to the news. ProjectorGames made a name for itself on XBLIG with its world building game *FortressCraft*. "The new *FortressCraft* has been designed with high-end PCs in mind, so it should be exceptionally happy on the new consoles," he added.

> ***"I would still like to hear the details. Microsoft created a great publishing system with XBLIG, but then sort of chose to ignore it."***
>
> Thomas Steinke, DigitalDNA

However, describing himself as the "last of the great cynics", Sawkins offered a much-echoed sentiment with regards to how Microsoft will continue to support indies.

"I was incredibly happy and enthusiastic about XBLIG and XNA, yet Microsoft treated us as the black sheep of the family," he claimed. "Their goodwill and communication – and their team – disappeared over the years. Let's say I'm cautiously optimistic, but with a long memory."

"I guess I would still like to hear the details," agreed Thomas Steinke of DigitalDNA Games, which became a star of XBLIG with the *CastleMiner* franchise and *Avatar Paintball*. "Microsoft created a great publishing system with XBLIG, but then sort of chose to ignore it, and stopped supporting the platform tools that their most loyal developers were using."

Elsewhere, other indies were more explicitly positive, such as *Chompy Chomp Chomp* developer Utopian World of Sandwiches, which has released its games on XBLIG as well as many other indie-friendly platforms.

"We've been optimistic all along," the studio's co-founder James Woodrow told *Develop*. "We expected they would announce something when they were ready. They have been encouraging indies towards Windows 8 for some time now, so it's not surprising that they had something in store. They are unifying all their products, PC, mobile and tablet. It makes sense for the Xbox One to follow suit."

Elsewhere, Imre Jele, co-founder and creator-in-chief at *Surgeon Simulator 2013* outfit Bossa expressed a view common to many indies.

"I'm cautiously optimistic," said Jele to *Develop*. "Everything we've heard so far sounds great, but the real proof will be seeing self-published games succeeding on the platform."

From Jele's perspective, the two biggest challenges for Microsoft are to address changing its company culture to support the

unique needs of independent studios, and to create a digital game store which offers discoverability that puts indies on a level playing field with triple-A studios.

"With a system where the next *Call of Duty* game has the same exposure as the next breakout Indie hit, it creates a very interesting world for indies and big publishers alike," added Steinke on the matter. "If the platform is really set up to provide this even footing, it may mean some interesting changes to the way we are used to seeing games, particularly big games get published."

INNOVATIVE TIMES

There's also much optimism about the kinds of games indies will be able to create using the Xbox One's distinct features, as typified by comments from Woodrow.

"We'll see some crazy and innovative uses of Kinect and the cloud if indies are able to take advantage of them," he said. "The ability to use Achievements makes me optimistic that there will be no segregation between indies and published titles. The discoverability is going to be the most important part."

There has also been a generally optimistic response to the concept of using the Xbox One as a devkit itself.

"It's an absolutely brilliant idea," offered Jele. "And it was about time too. Anyone who has ever worked with devkits knows how cumbersome and expensive they make games development, for no real reason really. Using the consumer console as a development platform is a huge step forward as making games for consoles won't be the privilege of a selected few any longer."

> ***"We will see some crazy and innovative uses of Kinect and the cloud if indies are able to take advantage of them."***
>
> James Woodrow, UWOS

But not all are convinced that the console's status as a devkit is that important. As Sawkins was quick to point out, XBLIG, iOS, and Android already let developers use the destination devices as development hardware.

"People seem to be talking a lot about this like it's important, and it confuses me," he said.

Others, however, saw the return to the approach seen with XBLIG titles as reason to be more hopeful.

"This model of having to buy $10,000 development kits just doesn't work for indies, and just isn't necessary," said Steinke on the subject of the Xbox One's potential as a devkit.

"In my past I had spent many years as a professional developer doing console dev, and the XBLIG system worked better than any of the pro set-ups. It was a joy to work with. I hope they learned something from that."

Furthermore, there is a sense among indies that the initial denial of self-publishing and subsequent U-turn overall may have had a positive impact that reaches beyond the confines of games platforms specifically.

"Ultimately them dragging their feet on this issue was good for us," revealed Steinke. "It forced us to look at relationships with other companies and publishers, which has been very positive for us."

A BRIGHT FUTURE

Jele, meanwhile, is not alone in being hopeful that the new policy could also serve consumers – and the Xbox One itself – very well.

"If handled well, this move might just propel the Xbox One forward and make it truly next generation, instead of just an iteration on the last," he offered. "Replacing the desire for control with the will to enable developers makes consoles more attractive for indies. That means more and better games for our players. And ultimately that's what makes a platform successful."

"Microsoft needs this to succeed these days," added Steinke. "This is truly the 'era of indie', and I don't believe old publishing models alone will be enough to carry this box." ■

Mark Whitten (main image) who revealed the U-turn on Xbox One self-publishing. Above: James Woodrow of Utopian World of Sandwiches (top) and DIGITALDNA Games' Thomas Steinke

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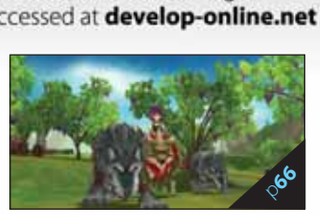

THIS MONTH: Epic's Legend Award-winning story story **Vicon introduces its Cara hardware** Kalydo's distinct cloud technology

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113 new UK studios opened in 18 months

Latest Develop 100 highlights ferocious activity in the start-up sector ● 80 per cent of UK teams at work on iOS titles ● London and Scotland games hubs dominate ● Brighton hub returning to form after start-up boom

IN THE NEWLY published edition of the *Develop 100* it has emerged that in the past 18 months an encouraging 113 new studios have opened their doors in the United Kingdom.

Compiled by *Develop*, the *Develop 100* for this edition takes the form of a comprehensive guide to the top 100 developers in the UK, and is now live in browser or on iPad.

The 2013 *Develop 100 UK Studio Hot List* features profiles of each of the 100 games makers, as selected by the *Develop* team based on their critical and commercial success, heritage and potential.

The guide also comes with a directory of all the studios currently operating in the UK, listing vital information such as their name, location, website and date founded, providing the industry with a valuable document, unrivalled and completely open.

Detailed analysis of the data in the book also revealed established games hubs in Scotland and London remain strong, and that along the south coast of Wales a new games development community is forming. The *Develop 100* makes it clear that today London plays host to 111 studios, while 73 have made a home in Scotland; with 35 in Dundee, 19 in Edinburgh and a further 16 in Glasgow. The Brighton games hub arguably may not hold the status it once did, but is making a comeback. It today counts 17 studios in the area, 12 of which were formed in the last three years.

Furthermore, the *Develop 100* also reveals that over 80 per cent of UK games makers create titles for iPad and iOS. The other most popular formats were Android, PC and Mac, while development of console and handheld titles is practiced at an average of just over 20 per cent of the nation's games making teams. Most of those were established or high in staff count number.

The *Develop 100 UK Studio Hot List* can be found within the *Develop* magazine app on the Apple Newsstand, and is completely free for a limited time.

You can also view it in your browser at **www.develop100.com**.

Develop 100 is published in association with UKIE, the UK games trade body for publishers and developers. ■

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DEVELOP DIARY

Your complete games development event calendar for the months ahead

TOKYO GAME SHOW 2013
September 19th to 22nd
Tokyo, Japan
tgs.cesa.or.jp/english

TGS is the final major stop on the world tour before the next generation consoles arrive.

Sony will no doubt be talking plans for PS4's Japanese launch, while Microsoft will be trying its upmost to give Xbox One a fighting chance after the 360's poor performance in this important market.

There's sure to be all manner of oddities from the Far East at this year's show, which is once again held at the Makuhari Messe in Tokyo.

AUGUST 2013

DARE PROTOPLAY 2013
August 8th to 11th
Dundee, UK
www.dareprotoplay.com

GDC EUROPE 2013
August 19th to 21st
Cologne, Germany
www.gdceurope.com

SERIOUS PLAY CONFERENCE 2013
August 20th to 22nd
Redmond, USA
www.seriousplayconference.com

GAMESCOM 2013
August 21st to 25th
Cologne, Germany
www.gamescom-cologne.com

UNITE 2013
August 28th to 30th
Vancouver, Canada
www.unity3d.com/unite

SEPTEMBER 2013

GAME MUSIC CONNECT 2013
September 9th
London, UK
www.gamemusicconnect.com

GDC CHINA 2013
September 15th to 17th
Shanghai, China
www.gdcchina.com

DEVELOP QUIZ
September 18th
London, UK
www.develop-online.net/events

TOKYO GAME SHOW 2013
September 19th to 22nd
Tokyo, Japan
tgs.cesa.or.jp/english

DICE EUROPE 2013
September 24th to 26th
London, UK
bit.ly/14l3109

OCTOBER 2013

CLOUD GAMING USA 2013
October 7th to 8th
San Francisco, California
bit.ly/17AFp7R

GAME MARKETING EUROPE 2013
October 14th to 15th
London, UK
bit.ly/10RFNu8

GAMECITY 8
October 19th to 26th
Nottingham, UK
www.gamecity.org

APPS WORLD EUROPE 2013
October 22nd to 23th
London, UK
www.apps-world.net/europe

BRAZIL GAME SHOW 2013
October 25th to 29th
São Paulo, Brazil
www.brasilgameshow.com.br

THE MONTH AHEAD

A look at what August has in store for the industry and beyond

AUGUST 8TH
Dare ProtoPlay 2013.
Abertay's annual show, where the public gets to go hands on with the Dare finalists' games.

AUGUST 19TH
GDC Europe 2013.
Europe's biggest development conference takes a close look at the future of video games.

AUGUST 23RD
Saints Row IV.
Volition looks to cash-in on the thrill of messing around with this, ahem, criminal offering.

AUGUST 27TH
FF XIV: A Realm Reborn.
Square's troubled *Final Fantasy* MMO gets a much-needed revival, and arrives on PS3 too.

AUGUST 14TH
World Humanitarian Day.
Dedicated to those who have lost their lives working for humanitarian causes.

AUGUST 20TH
Serious Play 2013.
Taking place in Washington, the SPC looks at what it takes to make effective serious games.

AUGUST 23RD
The Wonderful 101.
Viewtiful Joe fans, rejoice. Platinum Games' first Wii U title sees it return to its roots.

AUGUST 28TH
Unite 2013.
This year's annual gathering for Unity developers takes place in Vancouver, Canada.

AUGUST 14TH
Kick-Ass 2.
Chloë Grace Moretz is cracking skulls and more besides as Hit Girl in this comic book caper.

AUGUST 21ST
Gamescom 2013.
Thousands of exhibitors, devs and consumers hit the floor of Europe's largest games preview.

AUGUST 23RD
Disney Infinity.
The monolith behind countless children's properties launches its own *Skylanders* competitor.

AUGUST 29TH
Day against Nuclear Tests.
Countries take a stand against the testing of nuclear weapons and push for disarmament.

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Variable declarations

//COMMENT: BUSINESS

The once and future console

Nick Gibson analyses the thinking behind Microsoft's Xbox One strategy

Former Microsoft Interactive Entertainment president Don Mattrick (main) presenting the tech giant's upcoming console to the world at its unveiling earlier this year. Much has changed for the console and its maker since then

MICROSOFT'S DRAMATIC XBOX One strategy wobble has been portrayed as the result of a stand-off between gamers and Microsoft, with gamers the victors. As the dust settled from this remarkable volte-face, a succession of commentators started to wonder what gamers had actually won; the retention of the status quo just at the inflection point where you would have expected a major leap forward. This month, I want to explore whether the console manufacturers have blown a golden opportunity to innovate with its new generation, and what benefits that innovation could theoretically have brought to the console games market and its major stakeholders.

Nine years ago, the launch of *Half-Life 2* became mired in controversy due to its strict internet connection requirement and mandatory Steam installation. Retailers were up in arms, some even refusing to stock the game. Forums were awash with irate gamers upset at such onerous impositions and restrictions. Boxed product MMOs had been around for years, but *Half-Life 2* was different, a hugely anticipated triple-A game aimed at the mass gamer ranks. *Half-Life 2* went on to manage over 12 million unit sales. In the process it helped convert the core PC gamer audience from online sceptics to the believers they are now, paved the way for online authentication as the standard for PC games and created significant momentum for the transition to digital delivery.

ALL THEIR BASES BELONG TO US?

Microsoft was arguably trying to achieve something similar with Xbox One's original online requirements. Despite the fact that, based on the manufacturers' own figures, console connectivity rates have never exceeded around 70 per cent of their installed bases, Microsoft clearly believes that the benefits of this strategy outweighed the cost of sacrificing the 30 per cent that cannot, or is unwilling to, connect their console to the internet. This was a major calculated gamble and one that neither Sony nor Nintendo were willing to take.

> ***"Tying a game to a particular user like this may sound restrictive, but does not need to be, and could have actually enhanced player accessibility."***

I believe it was a risk worth taking, however, although its initial proposal for 24 hour check-ins was unnecessarily draconian. As Valve and other PC games developers discovered many years ago, an online service requiring a simple, single online authentication for all games pays off in the long term with substantially reduced piracy rates and a broader acceptance of downloads as an alternative to boxed products.

Tying a game to a particular user like this may sound restrictive, but does not need to be, and could have actually enhanced player accessibility. As Microsoft had originally proposed, a particular user's games could be accessed from any location via the cloud, or physically taken to friends' homes and played. The rights would simply follow the account.

Ironically, one of the biggest potential benefits of an online authentication system for all new games could have been with used game sales. The ability to trade used (for example, already registered) games via the likes of GAME and GameStop could have remained with a point-of-sale 'deauthentication' service that would notify the console manufacturer automatically that a particular SKU has reverted to its original 'un-owned' status. For gamers, it would add no complexity nor impact their ability to trade via these stores. Far from inhibiting retailers, such a connection direct to the console manufacturer could open up a world of new digital sales opportunities by giving gamers the ability to buy any digital content at retail.

THE RIGHTS STUFF

Crucially, such a system could also have been used to provide an additional massive benefit for gamers and one that would have put consoles ahead of other games markets: digital trade-ins. Whether downloaded or from a true boxed product, the rights to console games could be transferred digitally with relative ease. Such a used game trading platform would not only substantially increase the accessibility of used game trading, but also allowed console manufacturers and developers/publishers to share in the revenue this trade generated; something they clearly crave.

Microsoft's original Xbox One strategy was therefore something of a flawed gem; it was unnecessarily restrictive and was revealed in a thoroughly confusing way with little explanation of how it would benefit the most important stakeholders: gamers. Clearly, this was not the way it played out. Microsoft was attempting to bring console gaming not only in line with PC, web, and mobile but potentially push it beyond them. It is shame therefore that such progress that could have benefited all the stakeholders will not now take place with this generation. ■

Nick Gibson is a director at Games Investor Consulting, providing research, strategy consulting and corporate finance services to the games, media and finance industries. **www.gamesinvestor.com**

//COMMENT: STUDIO MANAGEMENT

Game for a jam?

Creative Assembly's community manager **Craig Laycock** on why everyone should game jam

WE'RE AT THE Birmingham NEC, and six teams are beavering away on what might become the next big thing in indie gaming. Musicians turn up their headphones as designers exchange ideas across the table. They jostle for elbow space with programmers, who, in turn, nudge back as they furiously type code.

The final bell goes and the teams slump in their chairs, exhausted. We're at the Creative Assembly Game Jam at Rezzed, and 24 participants have just climbed Mount Everest.

There's something about being at a game jam that makes you survey the process of games development through a slightly different lens – and that's why we think every person working in or around games development should attend at least one during their careers. These remarkable acts of creative endurance are extreme versions of the game development we do on a daily basis, with much more limited timescales and resources.

They're experimental in nature, wildly unpredictable and all the more impressive and surprising as a consequence. Game jams are Large Hadron Colliders for ideas. People, some of whom have never met before the day of the event, are smashed together; and out of this collision, under the intense pressure of deadlines, a wild new starburst of unexplored concepts and unfamiliar ground develops, and genre-canon is thrown to the winds. Or a black hole is created, consuming space and time.

BUILDING BASICS

But this is science, dammit, and the rewards generally outweigh the risks. There's a school of thought that says design should work from the basic building blocks – start only with what is required and subtract the fluff. For developers who have experienced years of designing a game, with a GDD that looks like a tome, it's hard to imagine a world like this, and that brings a certain thrill to it for many participants, some of whom work in established studios.

You're putting everything on the line, for everyone to see, and the line between success and failure is that much more obvious because of it. Ideas don't have the benefit of months or years of iteration. They are bare, pure notions of gameplay, exposed right down to their cores, not disguised by layers of features.

The winning entry at the game jam was voted for by a panel of all-star judges: Chris Avellone from Obsidian, Keith Stuart from *The Guardian*, and the affable Ed Stern from Splash Damage – all with decades of experience of games (sorry, guys) between them, and all of them visibly and verbally impressed with the originality on offer.

To give you an idea of the brilliance that can be accomplished in just 24 hours, the winning team at produced a fantastic two-player game called *80 Spies*: a game built on an extremely simple concept – movement and disguise.

The game starts with 40 randomly-moving sleuths on a dance floor (the titular reference to *80 Spies* coming from the fact that they're double agents), and each player controls one of the spies. The twist is, they don't know immediately which agent they are controlling, so they must move the controller to first establish this without giving away – through overtly human behaviour – which spy they are. Each spy must surreptitiously sidle on over to a suitcase containing a gun without alerting the other spy that they are not a CPU being, moving in a computer-controlled way. Once they have the gun, they can shoot their opponent, but it's a race against time so your aim has to be true.

BEATING THE DICE

Concept, high tension: that's quite an achievement. But all six teams managed to impress with original ideas – one of which basically beat DICE to a *Mirror's Edge* sequel with its rooftop parkour, and another blew us all away with its freeform, instrument-stacking music generation. All this after 24 hours of working together. There's much to be said for human endeavour and the creative harmony that comes from working in a small team when you're up against an incredibly short deadline.

We're thinking about running our own game jams internally. As well as providing a potential breeding ground for new ideas, they create a vibrant sense of teamwork and competition that just can't be inspired artificially. A team is more than the sum of its parts – that much is obvious – but smashing a number of unfamiliar creative forces together can produce wholly unexpected results, and that has value for even the most established and successful studio. ■

Laycock says a nifty game jam idea beat DICE's long awaited Mirror's Edge successor (main) to the punch with its design

Craig Laycock is community manager at Creative Assembly and a former games journalist, and this month stands in for his colleague Tim Heaton.
www.creativeassembly.com

//EXTRA CONTENT ONLINE

"Agreeing on our core engine was our first step, and the decision came down to the fact that *Godus* is highly procedural. It is based on a landscape that is designed with sophisticated maths to allow changes to be made on the fly."

Gary Leach, 22Cans

"Lots of people think about starting up alone. We dreamed about this business for years. One day we went to the pub with our friends and decided to do a game jam together. That is when we came up with *Chompy Chomp Chomp*."

Sarah Lacy, UWoS

"The conference; well, it kinda rocked for me this year. I got to hang out with a tonne of awesome devs and the charming as hell Pewdie. I won a hefty award. I ate doughnuts on a beach. It was a good three days. But one meeting stands out."

Mike Bithell, Indie developer

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InnoGames

www.innogames.com

BETA

DEVELOPMENT FEATURES, INTERVIEWS, ESSAYS & MORE

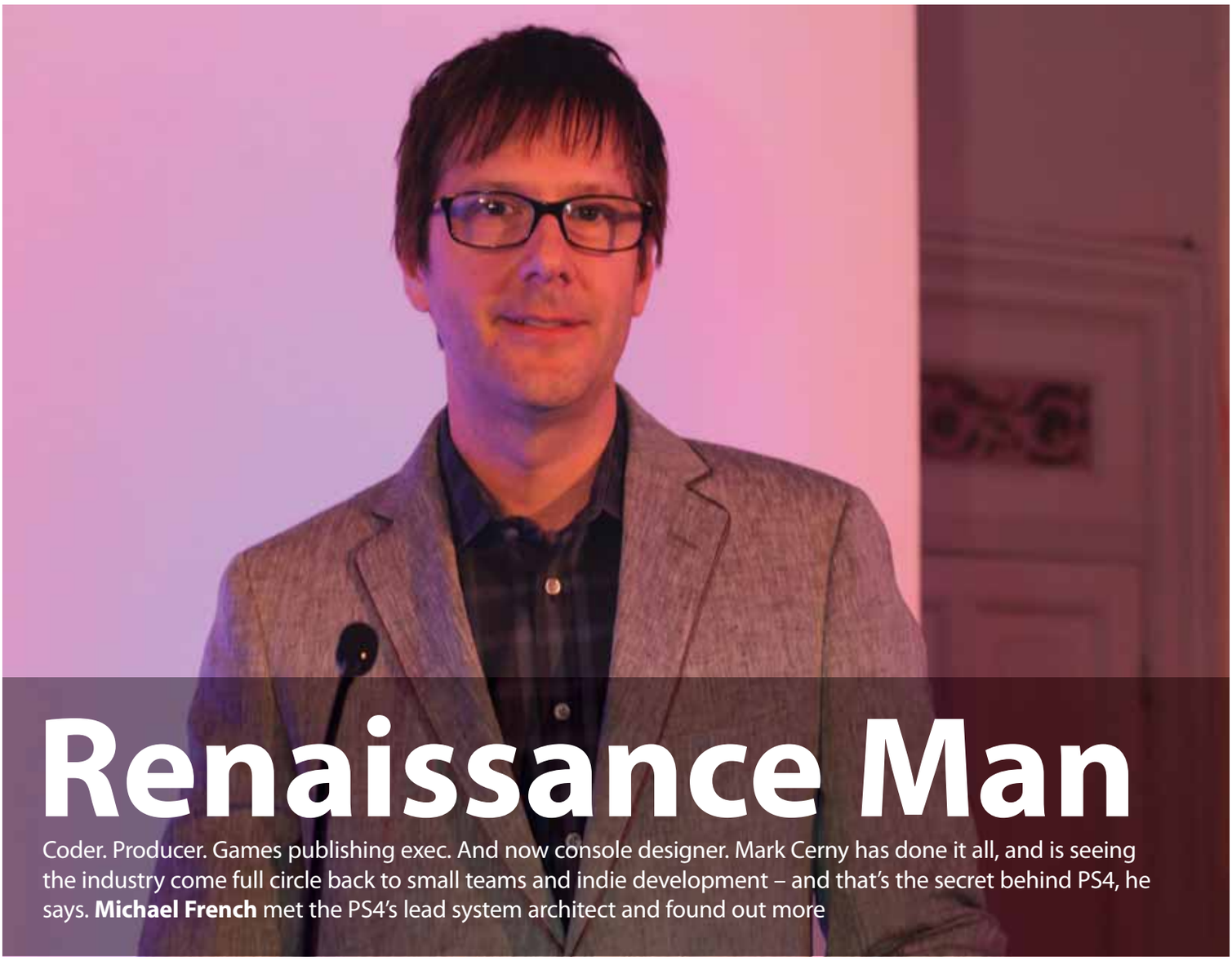
Tim Sweeney and Mark Rein on success p30

The architect of fun

Develop meets Mark Cerny, the man behind PlayStation 4, p14

Region Focus: Malta p41

Develop Awards winners p20



Renaissance Man

Coder. Producer. Games publishing exec. And now console designer. Mark Cerny has done it all, and is seeing the industry come full circle back to small teams and indie development – and that's the secret behind PS4, he says. **Michael French** met the PS4's lead system architect and found out more

NOTHING SUMS UP the bloat of modern video games better than the PS3.

Sony's high-end console was billed as an all in one media solution; a complicated console that could render incredible graphics and immersive content. Its creator, Ken Kutaragi, talked of it in revolutionary terms.

But all it really did was contribute to an acceleration towards what PS4 lead architect Mark Cerny calls 'heavy content': ballooning team sizes, bank-breaking budgets, and a big demand on art assets.

Cerny is these days an iconic figure for the reinvigorated format-holder. But ask him about the PS3, and he's diplomatic. He describes the PS3's early problems as '99 per cent hardware and one per cent software' – it was a powerful black box which on launch had next to no tools to tap into its resources.

But PS3 is valuable context when talking about Cerny and PS4.

He did not design the previous Sony console; only made software technology for it (producing internal tools which pretty much saved the format, by all accounts).

But it seems that everything he has done in his role as PS4 architect, and everything that has happened in the industry since the start of the last generation, has been a reaction to the foibles of the console market. iOS and its slick straight-to-market distribution was an antidote to retail. The rise of web titles and social games a reaction to unwieldy games platforms and over-eager approval processes. And PS4 a reaction to Sony losing development support.

> ***"Hardware development in 1985 was very different to that design today. Back then you could just go out and buy chips."***
>
> Mark Cerny, PlayStation

"2005, 2006, 2007…" he recalls when he meets us after his Develop in Brighton conference keynote. It was this tough time in the business, he admits "that established the culture we have today".

"Anyone who lived through those years intuitively understands the importance of international collaboration, the value of frank conversation, the importance of software and hardware, the value of third parties, and so on.

"That's the result of experiences over the PS3 years. So going out and wanting to work with people for PS4 was incredibly natural."

PAST LIVES

But let's rewind a bit, to before when Cerny was travelling the globe to covertly talk PS4 with top-flight games studios.

Cerny's career is packed with notable highlights and interesting twists. He has held a variety of roles in the games business, on a diverse slate of projects, and the cumulative force of all that experience is what is coming to bear on PS4.

He first got into games in the early eighties, ditching his degree to go work for Atari. Cerny's a bit too modest when he says he joined too late for the arcade revolution, even if the market had reached saturation point by the time he was there: one of his first games was the legendry *Marble Madness*, and he was even then learning about hardware manufacture, with an eventually-aborted arcade hardware board system design amongst his projects.

"Hardware development in 1985 is very different to that design today," he remarks, uninterested in talking about how his first work foreshadowed his most recent. "I did a fairly advanced arcade hardware design as one guy. Back then you could just go out and buy chips, and put them on a board. But today we are talking about huge transistor counts, and the chips are compiled. You aren't in there positioning each transistor yourself."

As well as designing the PS4,Cerny has recently lead development on Knack, coming to the console soom

Sega's Master system 3D glasses served as one of Cerny's earliest hardware projects

But while the mechanics of the trade have changed over time, there is one important point about the games industry in the 1980s that has only started to ring true again recently, and which Cerny and Sony is tapping into: "In 1985 there was almost no difference between an amateur and a professional."

Later in the decade, Cerny had left Atari for a job at Sega in Japan, where he worked on a variety of Master System projects – including its active-shutter 3D glasses, an innovation that wowed eight-year-olds but never found a market – and latterly a producer role on *Sonic 2*.

His seat on the cutting edge of games tech led him to Crystal Dynamics, where he eventually brokered the first deal for a US PlayStation devkit in the early Nineties. This was a bigger moment that it might seem on paper. Sony had been refusing to send hardware outside of Japan. Cerny didn't take no for an answer. During a visit to Tokyo, Cerny visited its HQ to request a devkit in person, creating a good enough first impression to eventually secure the hardware.

Even with the PlayStation's increased power and budgetary demands, Crystal Dynamics was able to "spend two to three million dollars per title" and get incredible results from the Sony hardware, Cerny says – another instance where he saw firsthand how a streamlined approach can create impressive products.

But that meeting at Sony HQ had done more than give Crystal Dynamics an upper hand on the new wave of CD-based consoles – it had locked Cerny on the trajectory towards PlayStation.

> ***"Heavy content will still thrive. But in many ways we will return to the freedom and broad content that made PS1 unforgettable."***
>
> Mark Cerny, PlayStation

After here, there's a long list of impressive achievements, first as games boss at Universal Pictures and then as contractor for Sony Computer Entertainment, that haven't just defined his career, but the PS4 too.

He helped create *Crash Bandicoot* and *Spyro the Dragon*, giving him experience of big franchise development. A few years later, he was the first American to work on PS2, making a graphics engine in Tokyo for three months. After that, he did design and coding for flagship games *Jak and Daxter* and *Ratchet and Clank*.

By the time the PS3 rolled around, he was a go-to person for technology at SCE. He sequestered Naughty Dog's ICE team to Japan to help design PS3 software in 2004 and 2005, their work helping buy a year's time for developers working on the platform.

This is where most *Develop* career profiles might end. But Cerny was at the coalface of the exhausting pressure generational hardware was putting on games developers.

Teams were growing in size and roles for individuals were getting overspecialised, says Cerny – it would become impossible for a single person to make any major contribution to a game, he says, pointing to a PS2-era example where good ideas just meant headaches for all: "If a creative director changed a game all the early low level code with have to be scrapped."

Games consoles' awkward symbiosis with actual games development was causing a further spiral as the machines got more and more complicated. Cerny says the 'time to triangle' – the length of time it takes to to create an engine that can render what the console is close to capable of in terms of triangle count – had increased by a factor of 12 between PSone and PS3. It was a month ▶

HOW THE PS4 ARCHITECT BUILT HIS OWN JOB

Cerny sharing his professinal story at the Develop in Brighton conference

ONE OF THE more rousing anecdotes from Cerny's career is how he got the job as PS4 system architect.

He had an "epiphany" after years working on PlayStation hardware about what the PlayStation 4 should be. He even spent an entire holiday reading up on components for the machine.

There was one problem: "They hadn't even put a PS4 team together yet." By all accounts, they weren't even thinking about it yet.

"But I started thinking what the CV would be like for the project leader."

The perfect console designer job ad would be the unlikely sounding 'Bilingual developer. Must have game design, engine coding and generalist programming experience. Executive producer credits on multi-million dollar hits needed. Be willing to travel.'

Unlikely, that is, unless you are Cerny, who started his career on arcade machines at Atari and before heading up Universal Interactive titles such as *Crash* and *Spyro*, which became PlayStation icons.

He admits than an outsider (Cerny is a consultant for Sony) inventing an influential role for themselves at a hierarchy-heavy Japanese games company could have "seemed a little aggressive, I guess".

But it wouldn't have happened if he hadn't asked in the first place. A lesson there for anyone wanting to secure a promotion.

In the wake of the PS4 announcement, Cerny's console has enjoyed a wealth of positive press, with the controller a particular star

on the first PlayStation, and could take a year by its third generation of hardware. The PS3 platform's many innovations, such as the SPU memory structure, were turning into quirks that developers just didn't want the hassle of.

On the record, Cerny is polite about that platform, but you only need to look at what he has concocted for the PS4 – an easy to develop for x86 architecture with heaps of memory – to understand the frustrations the entire industry had with the PS3.

HARD WORK PAYS

In fact, Cerny heard all the frustrations first hand. After switching his role to the PS4 preliminary design shortly after the arrival of PS3, he toured the world visiting studios to get their views on what a next-gen console should be – and had to work hard to get a decent response.

"I talked to more than 30 teams, so visited Japan, North America and Europe. The big issue for me was that you are coming forward from SCE and you are asking them about the things that never would have been asked before in the history of the company.

"The first response you get when you ask for feedback is very nice and developers say what they think you want to hear to foster the relationship. [SCEA dev relations chief] Adam Boyes calls that 'tea and crumpets'. But it if it's tea and crumpets it doesn't actually help.

"So I found that the groups I would tend to go visit the most were the groups where I would have a group of people on the other side of the table with very strong opinions. They would say what was right, what was wrong, and what needed doing. I was actively seeking out the groups who would put me through the wringer the most over the design."

And studios were more than willing after a while – even making it known when new decisions weren't to their liking.

> ***"If it's not done with a few hundred people and outsourcing it's called 'indie' – even if it's in-house like Journey or some guy at his house."***
>
> Mark Cerny, PlayStation

At one point "we had a tough decision to make on the PS4," he says (but won't actually confirm what the decision was about). "There were pros and cons, we hashed it out. And then it was my job to go and tell everyone. And when it's the wrong direction, you are going to get a strong response. I started in 2008 which was less than two years after the launch of PS3, so people were very much still involved in studying the SPUs and trying to figure out how to best integrate them into the overall technical architectures of their games.

"It's unusual for them to have that feedback heard to some degree, so they feel they need to give it much stronger than they need to."

Getting shouted at by some of the smartest developers in the world doesn't phase Cerny, who is likely to outsmart them anyway – and the resulting new console has been met with near universal applause from games developers.

WIDE OPEN

But PS4 answers a bigger question than simply redressing Sony's former hardware mistakes.

It's no coincidence that it also arrives as the format-holder adopts a broader remit for content, has thrown open the doors to indies, ditched archaic concept approval, and is proactively hunting down one-man teams as well as cash-rich publishing partners.

"Heavy content will still thrive," he says, saying his own favourite genres like JRPGs or games with deep silos of content like *Skyrim* still have a home on PlayStation. "But in many ways we will return to the freedom and broad content that made PlayStation unforgettable in the first place."

Indie games are the obvious first place to start, though. On the whole, Sony has until recently been out of step with this world, where rogue coders, student teams and individuals didn't have the means or time to become certified PlayStation developers. Now Sony is actively paying for ports of their games – getting an element of exclusivity and a cut of revenue, and not asking for old-fashioned IP ownership – in order to add more colour to its portfolio, and also just prove out how much it has changed.

What constitutes an indie? "We at SCE are calling the smaller, nimbler titles 'indie,'" explains Cerny. "So if it's not done with a few hundred people and outsourcing it's called indie – even if it's in-house like *Journey* or some guy at his house."

There is a hunger for this content both within the industry and outside it, he says: "Developers want a more intimate relationship with the game being created, and gamers want something more unique."

But Cerny also characterises the efforts to court this blossoming part of the market as Sony paying its dues back into the business.

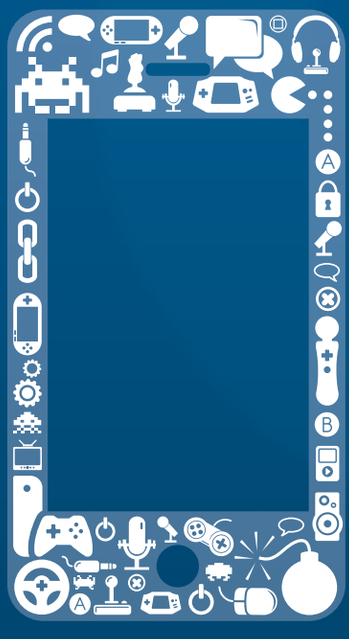
"It's healthy to elevate the visibility of the smaller titles. The bigger games have substantial marketing budgets anyway. The middle is not doing so well, but the high end is doing $20m to $50m in advertising. If we can help to elevate the smaller titles it creates a healthier environment. For developers, if you have been doing indie development on PC now you can bring those titles to the PlayStation platforms. It also means that if you have been working on triple-A development and have been looking to a way to give a broader or deeper contribution then you can now do that on a small team as well."

If anything, while the PS4 is a mission statement to harness the technology that has propelled the industry forward, it is also reaching further back to the past – a better time when budgets were smaller, there were more titles out there, and games were simply easier to make and get to market. If the young Mark Cerny was making Atari-style games today, he'd likely find a place for them on PS4.

Maybe he thinks of this when you ask about the potential that PlayStation 4.

He calls it a "Renaissance of gaming" – and says it so matter of fact you can't help but believe him. ■

Congratulations to all of the Develop Award winners



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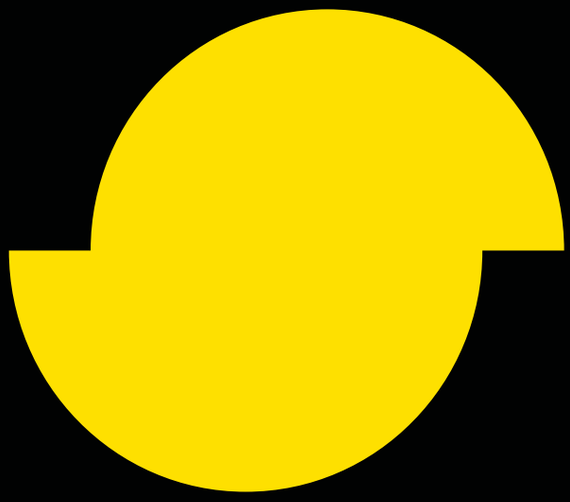

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The best of the best

July saw the annual gathering of the industry's best for the Develop Industry Excellence Awards 2013. Here we bring you a round-up of all the winners, their reactions to winning and some of the night's best moments

THE ANNUAL DEVELOP Industry Excellence Awards are now in their eleventh year. But age hasn't seen the event become any less relevant.

In fact, as the cream of the crop of the world's development industry gathered in Brighton in July to see peers and colleagues recognised, it was clear that this year the nominees and winners represented the most diverse, exciting and relevant industry cross section seen in some time.

Across awards as diverse as New IP and Services, nominee pools bristled with exciting companies and projects, painting an encouraging picture of the health and creativity of the games sector today.

Over 550 guests from some 170 companies attended the ceremony, where *Ni no Kuni*, *Thomas Was Alone*, Oculus Rift and Unity all left with an award to clutch.

Supercell, the Finnish studio responsible for multi-million-dollars-a-day iOS cash cow *Clash of Clans* was the only company to take two of the peer-voted prizes home, for New IP and Independent Studio. Epic Games seniors Tim Sweeney and Mark Rein left with the coveted Develop Legend award, which for the first time recognised the contribution of those from outside the United Kingdom.

Elsewhere the majority of the awards went to UK studios after a strong year for games businesses in all forms – independent, online and social, mobile and console – with wins for Peter Molyneux's 22 Cans, SCE London Studio, Fireproof Games and Boss Alien. Additionally, *Candy Crush Saga* firm King was honoured for Business Development. Read on for all the award winners.

This year's awards host Imran Yusuf, whose personal games industry anecdotes surprised the audience

Epic's Tim Sweeney (left) and Mark Rein (right), collecting their honours for more than a decade of service to games makers worldwide

DEVELOPMENT LEGEND: TIM SWEENEY AND MARK REIN

"We had a lot of help throughout the years, and we couldn't do it without all of our employees, partners and users."

Mark Rein, Epic Games

"Really, Epic's achievement is not what we've done, but what our users have done, so thank you very much to them for this."

Tim Sweeney, Epic Games

THE JUDGING PANEL

Over 70 games industry experts voted on this year's nominees, and *Develop* is very grateful for all of their support and help:

Alessandra van Otterlo, DGA
Aaron Lee, Develop
Adrian Hon, Six to Start
AJ Grand-Scrutton, Dlala Studio
Alex Ward, Criterion Games
Alistair Aitcheson, independent
Andrew Webber, Microsoft
Andy Emery, Side
Andy Robson, Testology
Anthony Matchett, Wave Studios
Barry Meade, Fireproof Studios
Ben Murch, Rodeo Games
Ben Parfitt, MCV
Charles Cecil, Revolution Software
Chris Doran, Geomerics
Chris Dring, MCV
Chris Lee, independent
Chris Wilson, Abertay University
Craig Albeck, Sumo Digital
Craig Chapple, Develop
Dan Marshall, Size Five Games
Dan Pinchbeck, The Chinese Room
Darren Jobling, Eutechnyx
Ella Romanos, Remode Studios
Franziska Lehnert, Crytek
Gareth Edwards, Cubic Motion
Garry Taylor, SCEE
Gaz Deaves, Rocksteady
Georg Backer, Hotsauce Interactive
Ivan Davies, Catalys
Mile Jacobson, Sports Interactive
Jaime Cottini, Yoyo Games
James Batchelor, MCV
James Brooksby, Born Ready Games
James Spice, Testronic
Jason Avent, Boss Alien
Jeff Tawney, Hairy Moose
Jude Ower, Playmob
Karl Hilton, Crytek UK
Keith Russell, Babel Media
Liz Prince, Amiqus
Lizzie Wilding, NaturalMotion
Lorraine Starr, Yippee Entertainment
Marc Canham, Nimrod Productions
Mark Estdale, OMUK
Matt Southern, Evolution Studios
Michael Movel, Fat Pebble
Michael Souto, LocalizeDirect
Mick Morris, Audiomotion
Naomi Alderman, independent
Oli Christie, NeonPlay
Oscar Clark, Applifier
Oskar Burman, Rovio
Patrick O'Luanaigh, nDreams
Paul Bennun, Somethin' Else
Paul Durrant, Abertay University
Paul Porter, Sumo Digital
Paul Taylor, Mode 7 Games
Peter Lübeck, Tarsier Studios
Peter Molyneux, 22Cans
Phil Stuart, Preloaded
Richard Scott, Axis Animation
Sam Collins, UKIE
Sergio Pimentel, Nimrod Productions
Shahid Ahmad, SCEE
Simon Meek, The Story Mechanics
Simon Oliver, Hand Circus
Jonathan Smith, TT Games
Sophia George, Swallowtail Games
Steve Ellis, Crash Lab
Tim Heaton, Creative Assembly
Torsten Reil, NaturalMotion
Will Freeman, Develop

THE WINNERS

NEW IP | USE OF A LICENCE OR IP | **VISUAL ARTS** | AUDIO ACCOMPLISHMENT | **USE OF NARRATIVE** | PUBLISHING HERO

NEW IP

CLASH OF CLANS (SUPERCELL)

"Thank you so much. This really does mean a lot to us all at Supercell."

Heini Vesander, Supercell

USE OF A LICENCE OR IP

ANGRY BIRDS: STAR WARS (ROVIO)

"We're all huge fans of the Star Wars series of films. Live long and prosper... I mean, 'may the Force be with you'."

Mika Rahko, Rovio

VISUAL ARTS

CRYSIS 3 (CRYTEK)

"This is a great surprise. Thank you very much everyone. This was a real team effort, so thanks to everyone; all of you in that team."

Karl Hilton, Crytek

AUDIO ACCOMPLISHMENT

WONDERBOOK: BOOK OF SPELLS (SCE LONDON STUDIO)

"We had an absolutely brilliant team on the game, so a massive well done to them, and thank you so much."

Dave Ranyard, SCE London Studio

USE OF NARRATIVE

THOMAS WAS ALONE (MIKE BITHELL)

"Wow! This is amazing. Lots of people helped here so I want to thank all of them. And most of all I want to thank my girlfriend, Kerry".

Mike Bithell, Independent

PUBLISHING HERO

KICKSTARTER UK

"I'd like to take this opportunity to say how brilliant Kickstarter is, especially for games. It's helped lots of people in our industry."

David Braben, Frontier, accepting the award on behalf of Kickstarter

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THE WINNERS

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TECHNICAL INNOVATION

OCULUS RIFT (OCULUS VR)

"This is awesome. Virtual reality has finally arrived. Thank you so much to all the developers that have supported us and made this happen."

Brendan Iribe, Oculus VR

ONLINE INNOVATION

CURIOSITY (22CANS)

"This is just incredible. And It's very rare to all these inspiring people in one room. Thank you all so much for all that you've done."

Jack Attridge, 22Cans

TOOLS PROVIDER

UNITY TECHNOLOGIES

"Thanks, especially to our staff, and to our wonderful community that use Unity to make their games."

Andy Brammall, Unity Technologies

ENGINE

UNREAL ENGINE (EPIC GAMES)

"Thanks everybody. We'd like to thank all of our users that make a great game of any scale with our engine."

Tim Sweeney, Epic Games

CREATIVE CONTRIBUTION – AUDIO

NI NO KUNI: WRATH OF THE WHITE WITCH (SIDE)

"This is fantastic. Thank you very much, and a big thanks to all of our team and all our peers."

Andy Emery, Side

CREATIVE CONTRIBUTION – VISUALS

WARGAMING TRAILERS (REALTIME UK)

"Many thanks to everybody who voted for us. This means a lot to both our two teams."

Dave Cullinane, Realtime UK

SERVICES | RECRUITMENT | **MICRO STUDIO** | BUSINESS DEVELOPMENT | **IN-HOUSE STUDIO** | INDEPENDENT STUDIO | **NEW STUDIO**

SERVICES

AUDIOMOTION

"This means a lot to us. Thank you very much to the team back in Oxford, and to all our customers."

Mick Morris, Audiomotion

RECRUITMENT

AMIQUS

"This is amazing. Thanks very much. I want to say a massive thank you to our team, who put in a huge effort every single day."

Liz Prince, Amiqus

MICRO STUDIO

FIREPROOF GAMES

"Thank very much. Our guys really deserve a massive round of applause for all their work."

Barry Meade, Fireproof Games

BUSINESS DEVELOPMENT

KING

"On behalf of the all of the King team, thank you very much, and a special shout out to the Candy Crush team."

James Burford, King

IN-HOUSE STUDIO

BOSS ALIEN

"I'm really chuffed with this. A few years ago we were five people in the loft at my house. Thank you very much."

Jason Avent, Boss Alien

INDEPENDENT STUDIO

SUPERCELL

"This goes to all our teams in Helsinki, San Francisco and Tokyo."

Heini Vesander, Supercell

NEW STUDIO

PLAYGROUND GAMES

"I want to say thank you to all the members of our team, who worked very hard to earn this."

Gavin Raeburn, Playground Games

MORE ONLINE

VISIT DEVELOP'S WEBSITE FOR MORE NEWS AND VIDEOS, AND CHECK OUR FACEBOOK PAGE FOR ADDITIONAL PHOTOS FROM THE NIGHT: WWW.DEVELOP-ONLINE.NET ● FACEBOOK.COM/DEVELOPONLINE ● WWW.DEVELOPAWARDS.COM

Aside from the awards themselves, the evening provided an unrivalled networking opportunity

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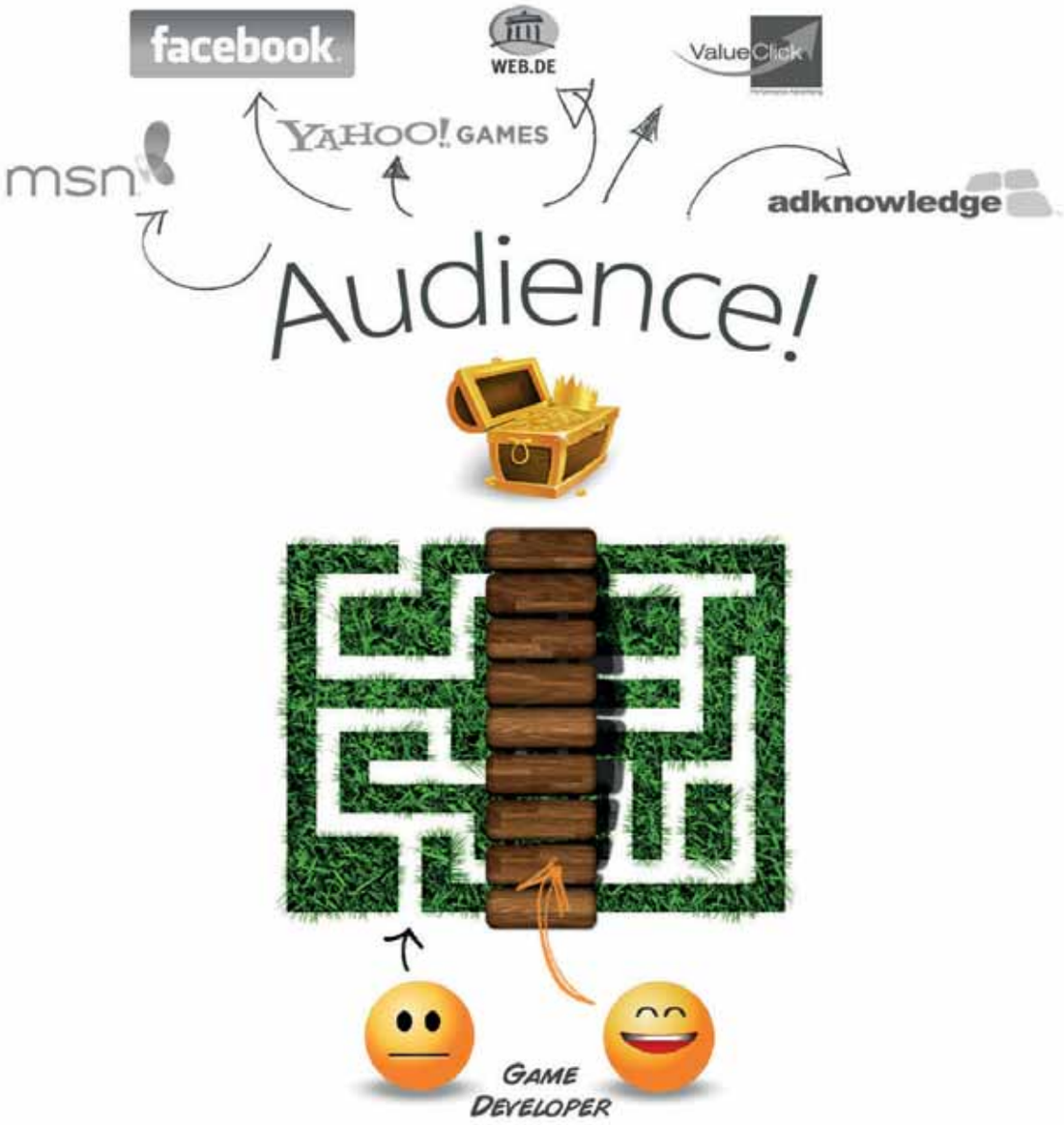

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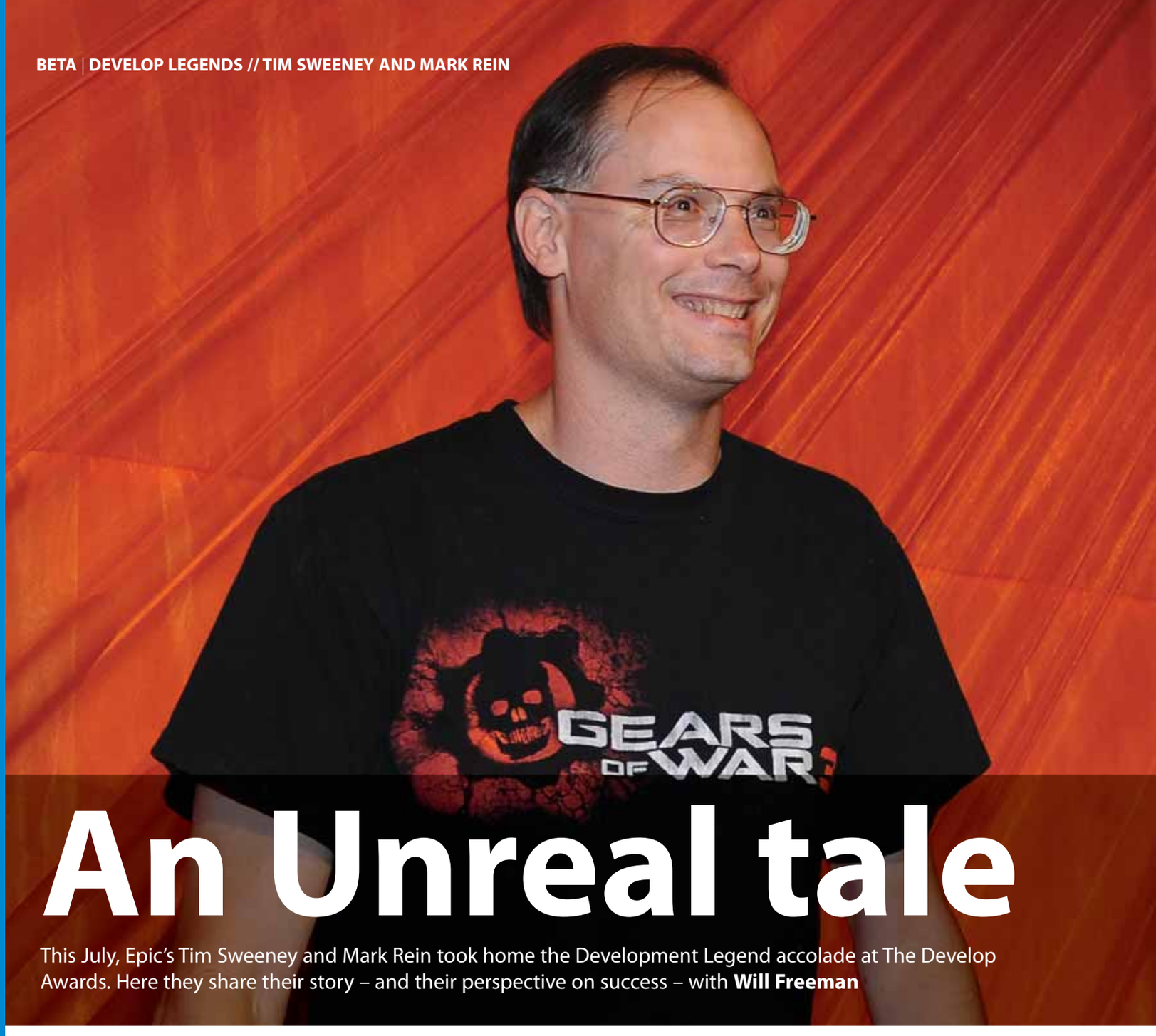


An Unreal tale

This July, Epic's Tim Sweeney and Mark Rein took home the Development Legend accolade at The Develop Awards. Here they share their story – and their perspective on success – with **Will Freeman**

Tim Sweeney (left) and Mark Rein (right) take to the stage to accept the Develop Legend award

EPIC'S IMPACT ON the recent history of the games industry is one few can match.

The studio's releases are both critically and commercially successful, with titles such as *Gears of War* and *Unreal Tournament* standing as thoroughbreds of the global triple-A stable. The company has spearheaded the movement to succeed in squeezing console-quality releases into mobile and tablet devices, and some of the outfit's designers have become true games development stars.

But the studio's real influence over modern video games has been through its technology. The Unreal Engine, now moving into its fourth iteration, has powered a staggering array of high-profile developments over the years, while its sister middleware the Unreal Development Kit has served as a noteworthy force in the broader trend of placing games making in the hands of a wider range of people than ever before.

Today Epic stands as a sizeable company, both in terms of its cultural weight and its headcount, but there are two men at the reigns that have been with the firm for over two decades. They are Tim Sweeney and Mark Rein, who together were recognised with the Development Legend accolade at this July's Develop Awards, given in recognition of their contribution to the games industry.

Mark Rein's business card will tell you he is the vice president of Epic Games, but in reality he is something more than that. He is

> ***"I quickly realised that a computer could do absolutely anything, as long as I could figure it out the right commands."***
>
> Tim Sweeney, Epic Games

arguably a frontman for Epic, so enthusiastic and passionate about the games business that he isn't a total stranger to making the headlines. He is infectiously positive about games, and not afraid to speak his mind.

Meanwhile, Tim Sweeney is Epic's founder, less often seen in the limelight but no less important. Indeed, Epic's story begins with Sweeney, and like all the best games development yarns it opens with a kid coding games in a basement.

BIG BROTHER

Before there was Epic, there was Sweeney's love for computers, born from a single trip to see his brother. Sweeney was barely ten years old, growing up in rural Maryland and fascinated by the mechanical. At that point his older sibling had moved away from home to work. When the time came for the youngster to visit his brother, he got to see the machines his relation was working with; early, hulking computers. But their primitiveness didn't deter him. Far from it, in fact, as the young Sweeney was beguiled.

"It was an astonishingly cool experience, so I went home and begged and pleaded with my parents for us to get a computer at home," remembers Sweeney. "And when I was 11 I got an Apple II computer and learned to program with that. From that point on I have spent the majority of my waking life with computers."

Previously Sweeney had been happy to pull apart go-carts and build forts, but now he

had found a new love, and it was built from lines of code. And it just so happened that code was something Sweeney understood.

"Mechanical things were always so hard to fix. It was different with computers," he says. "I very quickly realised that a computer could do absolutely anything, as long as I could figure out how to issue the right commands to get it to do what you wanted."

RAISING HIS GAME

From that point on he was devoted to his new love. Things moved slowly at first. His first game took six months, but, gradually, his speed and ability increased. Sweeney preferred to solve problems himself and then study the limited literature at his disposal. He funded his hobby mowing lawns, quickly learning that financial smarts would open doors that allowed him to do more coding.

From the ages of 11 to 21 Sweeney had made countless games; hundreds at a guess, which he still has on disks tucked away somewhere. But at the time he thought they were not worthy of attention.

He looked at professional releases like *Ultima* and felt he just couldn't compete.

However, inspired by companies like Apogee Software, he began to realise that making games didn't necessarily require the workforce and budgets of a huge company.

> ***"To get an award for something we feel honoured just to do anyway is a strange one, especially when it's an award for 'Legends'."***
>
> Mark Rein, Epic Games

Sweeney saw the viability of starting a games company proper. He commenced reading up on finance and accounting, certain that prudent business dealing would be a key skill. But he insists he wasn't good at that side of building a studio.

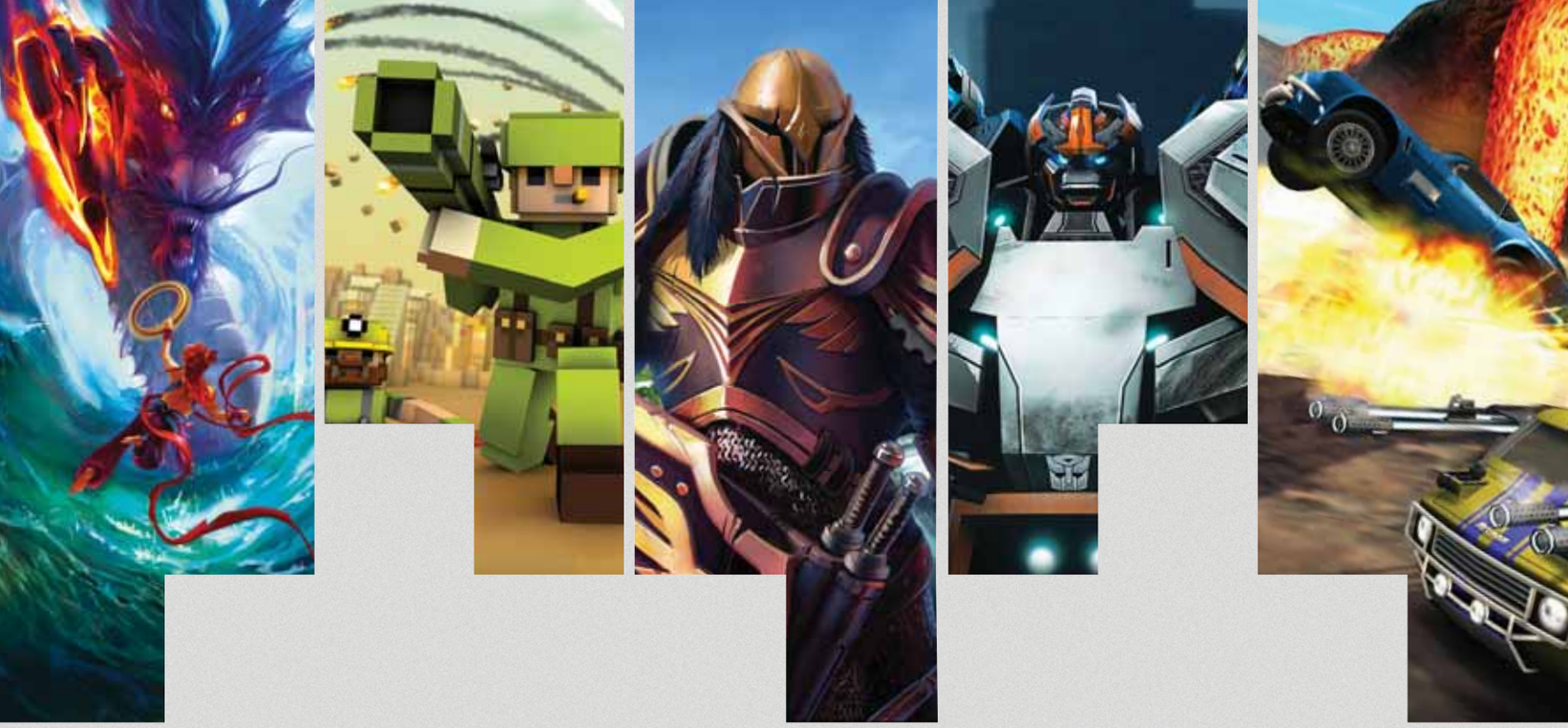
For years the games he built had kept coming, and eventually, so did Sweeney's neighbours, flocking to play with his creations. Like it or not, Sweeney had a focus testing group, from young kids to 30-year-olds. He watched them play, and they liked his games. They liked them enough that the word spread, and when he later dared to release a text-based adventure loosely themed around characters from Greek mythology as shareware, he found himself making $100 a day. That game was *ZZT*.

Epic wasn't quite yet a reality, but the seed had been sown. Sweeney saw that making games could really be his livelihood, and had established Potomac Computer Systems.

By this point he had also dropped his engineering studies with little left to do to graduate, and had attracted four employees, working together from his mother's basement. It was 1992, and Sweeney's second "proper" game was due out. It was called *Jill of the Jungle*, and he needed more help. It was time for Mark Rein to join the company, which was that year renamed Epic MegaGames.

RIGHT AS REIN

At the time, Rein was at id Software, having befriended Jon Romero and secured a job playtesting *Commander Keen 4,* before climbing through the company ranks.



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"Prior to joining Epic, Mark had talked his way into that company too," jokes Sweeney, who met Rein via something else he had long worked creating; namely bulleting boards. Around that time, during Id's development of *Wolfenstein 3D*, Rein parted company with his employer and joined Epic.

"He's an awesomely talented negotiator, and proved to be a great compliment to my programming skills," says Sweeney of the hire.

At the same time, Sweeney had put out a call for other developers to submit their games, and up-and-coming talent like Cliff Bleszinski and James Schmalz responded.

Soon Epic MegaGames was producing numerous high quality titles – many of them shareware – including *Epic Pinball, Jazz Jackrabbit* and *Solar Winds: The Escape*.

ENGINES OF CHANGE

As the industry changed, so did Epic MegaGames, demonstrating a trait that continues to define the company; which in turn is part of the reason for Rein and Sweeney's Development Legend recognition.

In 1998 it released 3D shooter *Unreal*, by which time it had moved away from the shareware business model. But something else that would prove to be more significant also happened. Epic MegaGames' phone started to ring, and the callers wanted one thing: Sweeney's games engine.

Back in 1995, Sweeney had begun work on what would become the Unreal Engine, using much of the core learning's from his engineering degree, which was suddenly feeling rather worthwhile. *Wolfenstein 3D* had convinced him "2D was over", and he threw himself into designing what would later become the bedrock for the company.

Sweeney particularly remembers the calls from MicroProse and Legend Entertainment, which inspired him to make Unreal Engine available as middleware, and soon Epic was both developer and tools provider.

In 1999, Epic MegaGames rebranded as Epic Games, and established itself as a titan of triple-A, which culminated with the release of *Gears of War* in 2006. Later mobile games making and studio acquisitions would come, bringing us to the present, where Rein and Sweeney took to the stage together at the Develop Awards to receive their award.

SECRETS TO SUCCESS

So how does it feel to win an award for over two decades of hard work? And just what does it take to be successful and influential? The answer to the first of those questions comes relatively easily to both, even if the feelings associated are hard to pin down.

"To be getting an award for something we feel honoured just to do anyway is a strange one, especially when it's an award for 'Legends'," admits Rein, "It feels like big shoes to fill when you look at the people that have won it before. It's amazing just to be in that crowd, and you certainly don't want to catch yourself thinking of yourself in that way."

"It's really cool to get an award like this," adds Sweeney. "We're in this industry because we love making games, and we love participating in it, and it's quite an honour to receive recognition for that. It's not something we set out to do. As Mark says, it's already an honour to be paid for making games."

Mark Rein once ran his personal credit cards up to around $28,000 in Epic's early days. Fortunately, today such sacrifices aren't needed at Epic

Getting at what has made Epic and its leading duo so successful is a little harder to define, but again, it comes down to passion, and an unquestioning devotion to making games for the love of the craft and business of doing so.

"It's about being driven, and part of it for us is being lucky enough to have a good upbringing," offers Rein on the secret to success. "Both of us had good families that supported what we're doing. And then part of it is luck, and being fortuitous with the people you meet, and being in the right place at the right time."

> ***"All the success – both monetary and in terms of recognition like the award – is just a by-product of a desire to make games."***
>
> Tim Sweeney, Epic Games

And Rein doesn't think it can be done just by striving for success for success' sake. He believes that while anyone can try to do the things it takes to get there, it requires something else; a will to take risks and complete dedication to what you love.

"I've always just strived to make great games," states Sweeney in agreement. "That was my motivation. I wanted to write cool programs. All the success – both monetary and in terms of recognition, like the Develop Award – is just a by-product of that desire to make games, rather than what I set out for."

EPIC SACRIFICES

There have been sacrifices too, from the very beginning right up to the present day. There are the long hours, the time away from family and friends, and betting it all on what you believe in; something founders of tiny indies and industry giants alike will know. Sweeney remembers all too well the day early in Epic's history that Rein had his American Express card taken away from him by the bank.

"There was one point when I was running my personal credit cards up to something like $28,000 when we were trying to get deals. There were times we didn't pay ourselves and stuff, but I don't want to make it sound like a hardship," says a pragmatic Rein. "There was lots of work, but we loved what we were doing. We're not out mining coal. It's brainwork and it's fun.

"People think of games developers as working very hard, long hours and crunching and things like that, but then so do doctors and lawyers and firemen and trash collectors and nurses. The list goes on. People everywhere work long hours."

Rein apparently told Sweeney that when they got their first big cheque in those early days, he would go straight to American Express to show them why he needed to push his credit card to the limit. But by the ▶

Tim Sweeney, who first mowed lawns to pay for computer parts, today stands at the top of one of gaming's biggest brands

TIM'S TIPS

How can your studio ape Epic's success? Founder Tim Sweeney has some advice for you

EPIC GAMES ISN'T precious about the way it made it big, and is happy to share the secrets to its success. So if you've set your sights on taking to the stage to accept a Development Legend award in years to come, you'd do well to listen to Epic's esteemed founder Tim Sweeney.

"My advise to everybody would be to work hard, make fun games and constantly be willing to reinvent yourself and your company as the games industry changes and as new opportunities emerge," offers Sweeney. "It's a rapidly evolving industry, which is why you see new companies coming along every year and becoming major successes.

"Things are always changing so you have to stay on the leading edge. And that's in all areas of games development, from technology and design to platform and business models evolving."

And there you have it; a straightforward logic. Mirror Epic's success in implementing that approach, and you might even make a classic game like those Sweeney and his team have crafted *(above)*.

time the opportunity came, he was far too busy to pursue his idea.

And they are still busy, pushing their products and encouraging their teams. They work tirelessly, but they love their work. Entertaining for a living, says Rein, is never a chore. And the fuel that keeps them motivated? It's another abstract; the 'spirit' of Epic.

> ***"Tim always recognised that there was always some new risk around the corner, so you can't get too complacent."***
>
> Mark Rein, Epic Games

THE WINNING SPIRIT

It's hard to argue that, in contrast with the corporate fascia many games companies of Epic's size sport, Sweeney and Rein's outfit doesn't have that character. Rein and former Epic personality Cliff Bleszinski are typical of the company; energetic, enthusiastic and not afraid to speak their minds. And that non-corporate, even unconventional image comes from Sweeney, says Rein.

"The fact that Epic has this distinct spirit and character comes from Tim," he confirms. "He just never let us develop much in the way of hubris. And Tim always recognised that there was always some new risk around the corner, so you can't get too complacent. We never settled down in that way."

"We've always kept the company simple enough that our big challenges are simply about technology and video games," adds Sweeney. "Those challenges are hard enough, but that focus has meant we've never evolved the company into a big corporation where you have executives who don't know anything about games. That's from the original spirit of the company."

Sweeney is not a man to mince his words, and from an outsider's perspective, it does feel like the spiritual core of Epic that started life in a Maryland basement still prospers. And Rein is optimistic that moving forward, Epic can continue to deliver something distinct to the industry.

"Right now I really think we are doing the best stuff we've ever done," he insists. "Unreal Engine 4 is just amazing, and really going to blow people away. And *Fortnight*, which we're building but can't talk about too much, is just one of the best things we've ever done. And all the mobile stuff is hugely exciting.

"For me, that's what's exciting; after 22 years we're still evolving and continuing to get better. We're still reinventing ourselves, and we've moved through several generations of the company, and we still keep setting our sights on higher peaks."

Based on Epic's past successes, those peaks will very likely be scaled. The real impact of UE4, in particular, will truly begin to be felt as the PlayStation 4 and Xbox One make their way into consumer's hands.

And, for the foreseeable future, it is Sweeney and Rein that will be guiding Epic as it embraces change and defines the way people make games. Unquestionably, they will continue to be Development Legends. ■

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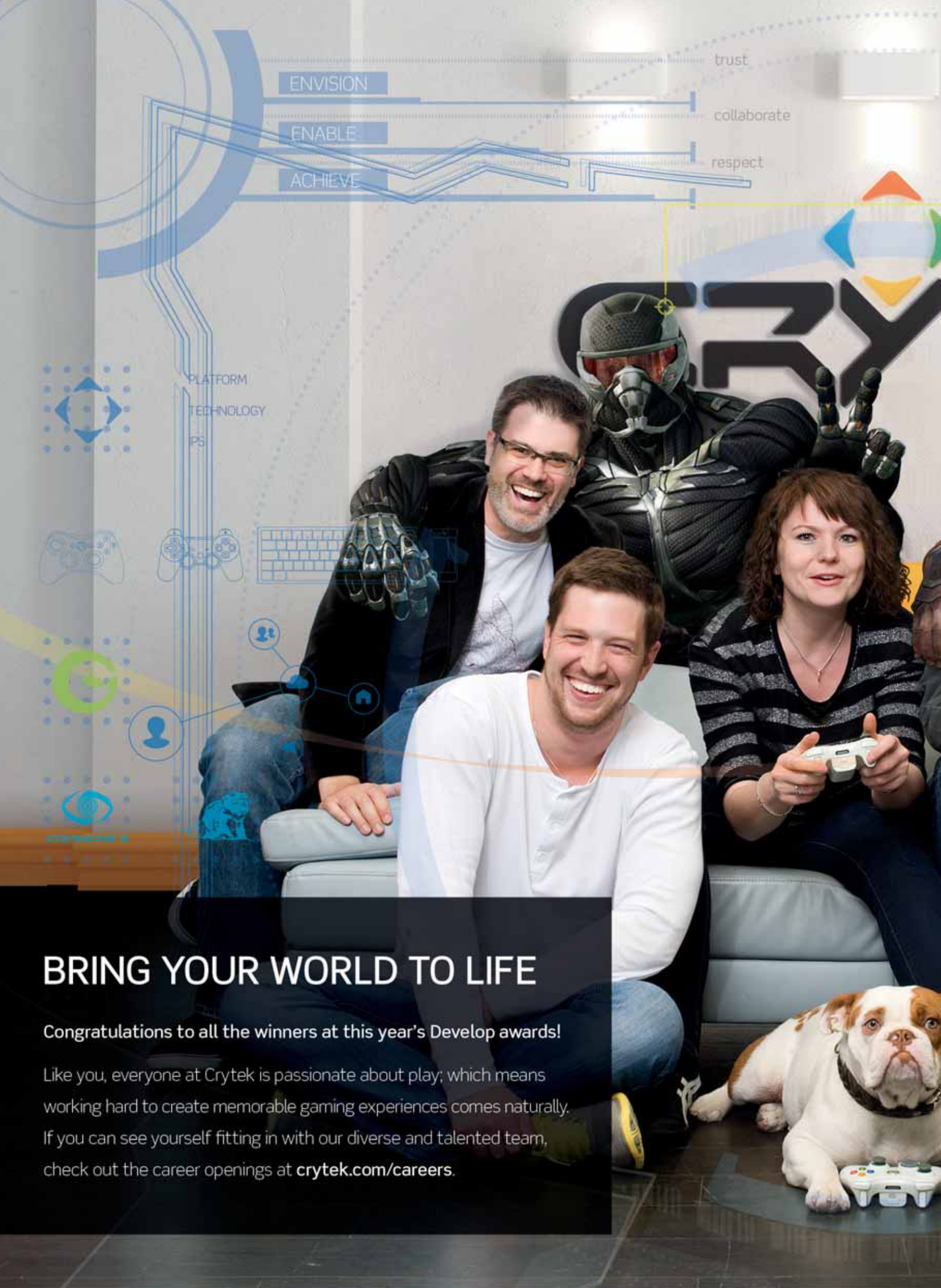

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CRYTEK®

Testronic redefined

2013 has seen Testronic rebrand, appoint a new CEO, and open a new facility. **Will Freeman** looks at an evolving company

AS THE CONSTANT churn of games industry deadlines, releases and events continues unabated, 2013 is a busy time almost everywhere in the industry.

But among the most active firms lately must be Testronic, having in recent weeks and months welcomed a new CEO, rebranded the entire company and expanded its Polish operation by opening a new facility.

As such the quality assurance, compliance and localisation service provider – which offers 37 languages – appears to be booming. But what instigated this period of ferocious evolution, and what does it mean to the services it offers across the entertainment sectors?

Firstly, there's the rebranding to consider, which focuses around a clarification of Testronic's four pillars of business.

"Our new brand gives an identity to our four business lines, each of which is now definitively represented by a coloured tick," says Testronic CEO Mike McGarvey of the new visual and structural form of the company he presently heads up. "Testronic has offered a broad range of services for many years, but now we have defined our own internal structure with more clarity, and we are better able to communicate our range of services to customers."

And so it is that the four divisions are now unmistakably defined, each catering for one sector within the broad entertainment industry that serves as Testronic's bedrock.

CRYSTAL CLEAR

The new structure is simple. The 'Games' division now offers localisation QA, functionality, compliance, compatibility and user experience testing, embracing every major games format from mobile to console.

> ***"We have brought our image up to date. This has been embraced with huge enthusiasm by the team."***
>
> Mike McGarvey, Testronic

Meanwhile, the 'Film & TV' team focus on DVD and Blu-ray, also supporting clients for UltraViolet, Master QC and Library Services.

Elsewhere the 'Digital TV' business line provides both manual and automated testing services for an array of TV manufacturers, set-top box producers and cable providers, and also supports the spheres of connected car and connected home entertainment.

Finally, the 'Software' team tests an increasingly broad spectrum of mobile applications, websites, online payment mechanisms and much else besides.

"The company image is not only important to attract new business and continue to engage our existing clients, but also assists and satisfies our ongoing search for talent," elaborates McGarvey, clearly intent on attracting the best staff he can.

"We have brought our image up to date," he continues. "This has been embraced with huge enthusiasm by the team and, therefore, we feel confident it will also act as an asset to help us further grow the business."

WELL DEFINED

But for Testronic, cementing the remit of the four divisions does not mean there will not be an overlap, especially in a world where the boundaries that once clearly defined separate mediums continue to merge.

Indeed, it is the fact that there is interplay between the quartet of company units that the firm believes better positions it to serve its clients.

"The overlap frequently comes from automation and specialist testing services that our Software business line is able to offer the other three divisions," explains McGarvey of the interplay.

"Of course there are other overlaps. The Film & TV and Digital TV business lines frequently attend the same events, and in tandem provide the testing services for the whole home entertainment experience."

Meanwhile, the arrival of a new team member at the top of the company means it can now take advantage of a broader range of experience from elsewhere in the video games industry and beyond.

McGarvey brings with him not just a fresh injection of management expertise, but also highly specialised knowledge from his time as CEO of well-regarded and famous outfits including Eidos and OnLive.

"The games division can also boast a real understanding of in-house games experience across the whole management team," affirms McGarvey.

"We really understand the pressure that publishers and developers are under to bring a top quality game to market, as many of the team have undertaken the task from the other side of the fence."

POLAND OF OPPORTUNITY

And as if those changes weren't enough to make the company stand out, there's the significant matter of opening a new games-focused base in Poland; a nation where Testronic already had a presence. The newly founded Warsaw office allows the service provider to expand its growing games operation in a tailored, newly fitted site, while retaining the previously-shared Piaseczno facility so as to specifically continue to expand the company's Film & TV business line.

The move follows a substantial eight years carrying out functionality, compliance and compatibility work from the city, with the new location reportedly selected to capitalise on both public infrastructure and a reported abundance of local talent in the area.

> ***"We understand the pressure that publishers and developers are under to bring a top quality game to market."***
>
> Mike McGarvey, Testronic

"Warsaw is a vibrant and bustling capital city with excellent central transport links and access to high quality personnel, many of which are drawn from the numerous college and university establishments nearby," confirms McGarvey, clearly besotted by the opportunity the city affords both his team and his clients.

GLOBAL SUCCESS

"Poland has already proved to be a hugely successful location for Testronic; our original Warsaw facility has been carrying out games functionality, mobile compatibility and compliance testing for some of the world's biggest games franchises for some time. We have also been testing DVDs and Blu-rays for major Hollywood studios from the same building."

Testronic's evolution also includes further changes in the Eastern Euopean country. The company has recently launched a new mobile compatibility service out of the Poland office.

And so it is that Testronic's staff – both in the London and Warsaw sites and in facilities in the Burbank, California, Tokyo, Japan and Diepenbeek, Belgium – have entered a new era for the outfit some 15 years after the business was founded.

Having already worked with high-profile games creators including Rovio, Zynga and Square Enix, it would be hard to refute that the specialist's client roster of developers and publishers will do anything but grow, and as it continues to expand its team, the future looks set to be assured for Testronic. ■

www.testroniclabs.com

Testronic's Polish team (main image), the new company branding (top right), the Poland facility (bottom right) and company CEO Mike McGarvey (above)

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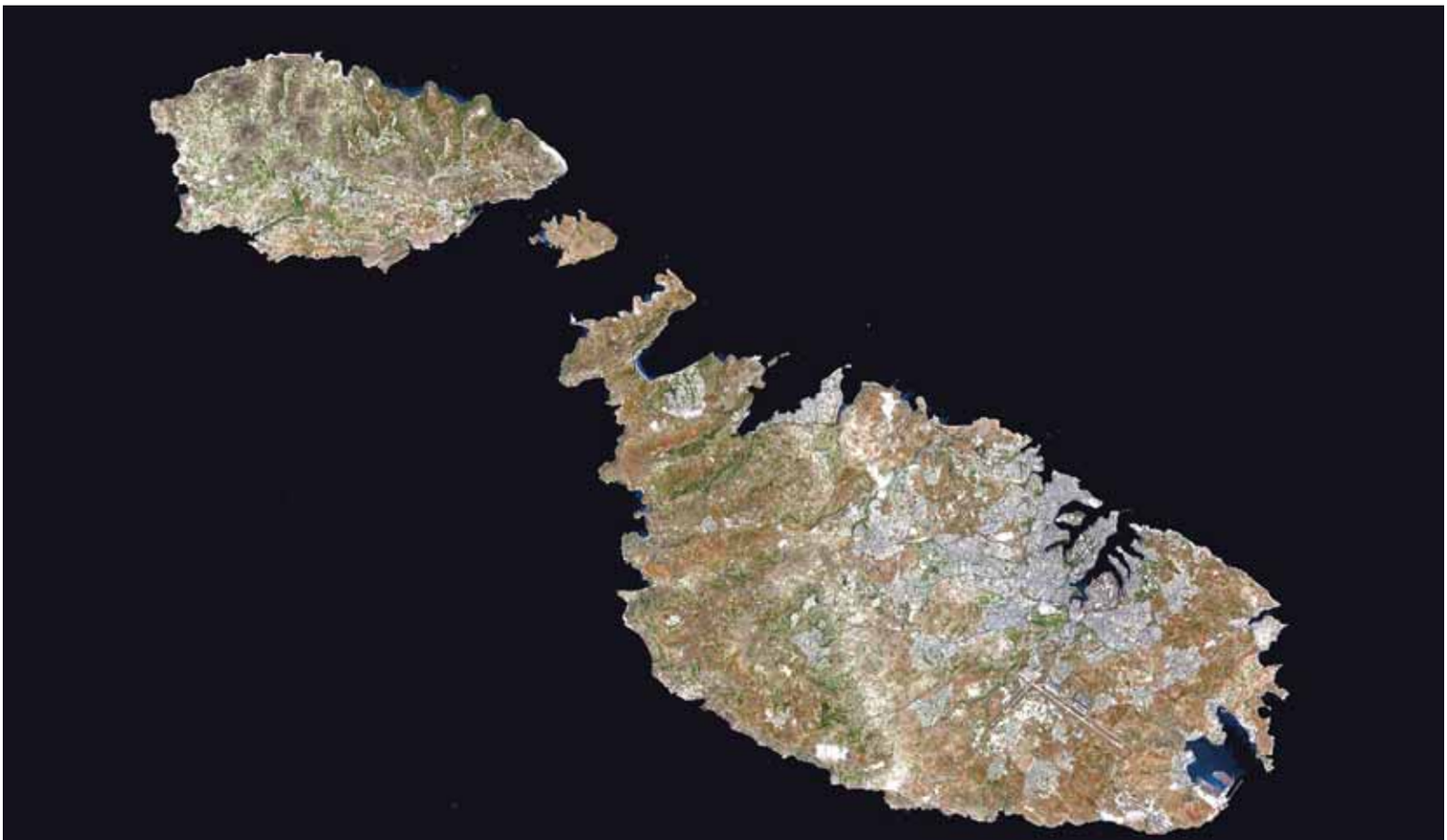

The secret of Malta's islands

The picturesque Maltese scenery might not be the most obvious place for a fledgling development hub to nestle, but the nation hides more than a few surprises, **Will Freeman** discovers

SOMETHING UNEXPECTED IS going on in the distanct land of Malta.

Despite being a home to just 450,000 inhabitants the island nation is proving that it can play host to an up-and-coming games development hub.

Five hundred games makers are currently plying their trade in the Mediterranean country, and by the end of the year 20 games studios will already be operating there, proving a populace comparable to a mid-sized European town can very much contribute to the global games industry. Malta may not be poised to become the next Canada, but it is set to punch above its weight and establish itself as an attractive place to set up a games studio.

So how has Malta built up a blossoming hub surrounded by the Mediterranean sea?

THE MEDITERRANEAN DREAM

The answer to that does have something to do with Malta's universal benefits, and the very thing that attracts scores of holiday makers to the country every year.

"It's a beautiful country," offers Nick Porsche, founder of Dorado Online Games, who came to the country after working with Big Point just over three years ago. "There's a good work-life balance here. It's inexpensive, English-speaking, and there's pretty much blue skies all year round. In fact, it's almost bathing weather most of the time. It's the Mediterranean dream really. My family never really considered moving on after we moved here."

But blue skies and beautiful beaches alone aren't the foundation of a meaningful games industry, which is why the support from the Maltese Government and related organisations has served the country's developers so well.

> ***"The next level would be the production of digital games, where we can capitalise on the experiences and the skills that Malta has built up."***
>
> Mario Galea, Malta Enterprise

Malta Enterprise, for example, is a national development agency responsible for promoting and facilitating international investment in the Maltese islands, and it has in recent years put a tremendous effort into both supporting developers based locally, and attracting studios from all over the globe to make a home there.

"We try to build on the experiences and the competences that we have acquired over the years," explains Mario Galea, chief officer at Malta Enterprise, of the logic behind Malta's commitment to games development.

In the past maritime and aviation, ICT, life sciences, and pharmaceuticals have all benefitted from national support, and now it is the turn of the games industry.

"In Malta there are a number of ICT businesses; there is software production, a big number of iGaming companies – about 400 – the filmmaking industry including post production, editing and sound editing, and you have the advertising industry, so we thought that the next level would be the production of digital games, where we can capitalise on the experiences and the skills that Malta has built up," Galea explains to *Develop*. "We want to attract some companies in this area, because there is exponential growth worldwide."

BUILT TO LAST

As such, Malta Enterprise, in collaboration with educators, government and investors, is seeking to attract studios and service providers to the country, hoping to build a sustainable industry that can employ 1500-to-2000 people; an impressive goal for such a small country.

And so it is that grants, financial incentives, administrative support and business assistance are available, with Malta Enterprise able to call on experience running back to ▶

Located in the Mediterranean Sea, the islands of Malta are rapidly becoming a games hub of their very own, with more than 500 developers

Top-to-bottom: Alan Duca of 5 ¼ Games, Nick Porsche of Dorado Online Games, Nilsen Filc of Puzzl Games, Stephen Caruana of Pixie Software and Maria Galea of Malta Enterprise

the 1960s to help studios local and distant establish a presence in the country. And it can do so fast, able as it is to move a developer from business plan to functioning studio in as little as two weeks.

As a result of such efficiency, in around three years Malta's games industry has already grown exponentially, in that time moving from almost nothing to its current state. And it seems local studios are convinced by the support available.

"The local industry is being recognised as a melting pot of both foreign and Maltese stakeholders, which range from individual indie developers to small indie studios and even larger big-budget companies," states Stephen Caruana, MD of Maltese mobile-focused indie Pixie Software.

"Now, the authorities are proactively seeking out the industry for feedback and consultation, and schemes and incentives specific to our industry are starting to be introduced," he continues. "An excellent example of this would be the Malta Digital Games Fund, which was set up to support the creation of locally-developed digital games.

Caruana goes on to reaffirm the fact that while such support is a recent trend, it is one that has made a significant impact in just a short time. And he is not alone in his optimism about the difference Malta Enterprise and its partners can make.

"Definitely, there is a strong commitment from the Government, and there are very good people working to assist and help wherever possible in Malta," says Porsche. "I found it particularly easy to set up a business here in Malta from an organisational point of view."

A SAFE BET

Another asset of Malta in terms of its relevance to games developers actually comes from an often-maligned related sector. As Galea mentioned, Malta has already proved itself in the iGaming space, known elsewhere in Europe as 'real money gaming', or, in lay terminology, the gambling games sector. With 400 iGaming companies based on the Maltese Islands, a considerable ecosystem exists, and it is one that games makers can tap into.

"We can rely on Malta's strong iGaming sector, that has been around since over ten years; we share a lot with them, even if they don't know it sometimes," suggests Nilsen Filc, CEO of local games maker Puzzl, and former iGaming sector employee. "We can and do build bridges with them, as they use some of our technology, have a great marketing knowledge and a strong online presence.

"They have teams for translation, QA, legal, analytics and data mining – and a lot of smart people accustomed to coping with addictions of players."

Furthermore, says Filc, Malta can boast of robust and capacious bandwidth linking it to the world – an important tool for any studio.

PROBLEM SOLVING

The iGaming sector does bring Maltese developers a challenge, in that they must strive to stand out from their peers in the world of real money gaming.

"Quite ironically, Malta has a sizeable footprint in the global online gaming and gambling industry, so as a Maltese game development start-up, one of our most

prominent challenges is to define ourselves as part of a separate, emerging industry," confirms Alan Duca, co-founder and lead game programmer at 5 ¼ Games, one of Malta's most recent start-ups. "We've discovered that this is more difficult to do than it sounds."

The double-edged sword that is Malta's games makers' relationship with iGaming isn't the region's only challenge. For there is another that will be familiar to even the larger

> ***"The local industry is being recognised as a melting pot of both foreign and Maltese stakeholders."***
>
> Stephen Caruana, Pixie Software

of the world's industry hubs, and that is the matter of talent. Fortunately, that is something the Maltese authorities recognise, and are presently moving to change.

"We need to increase the talent in Malta," acknowledges Galea. "We need to get people more 'on stream' in the labour market. We are working very, very closely with the government university, with private universities and the government and private vocational schools, in order to ensure that more people come on the labour market."

At the moment the country's games industry can comfortably employ 500, but Malta Enterprise wants to ensure that there is more talent available, especially for companies keen to scale up.

"We want companies to be able to grow," asserts Galea, who also highlights that the national labour cost is, relative to the quality of the workforce, relatively inexpensive in Malta.

EDUCATION MASTERS

As a result of the talent challenge education is key to Malta's collective plan to build a bigger games industry. The University of Malta is as a result offering a Masters degree in games, and in 2013 the educator established an Institution for Digital Games with a view to better to deliver world-class postgraduate education and research in game studies, design and technology. Elsewhere on the country's islands other games training is on offer, and it is apparent that local developers are satisfied with the early results.

"The quality of graduates from informatics-related courses offered locally has been consistently high, and I've also been in contact with young students who have been lucky enough to be able to enroll themselves in these new game development oriented

The Grand Harbour (above) is located on the eastern side of Malta's capital city of Valletta, and happens to be one of the most densely packed regions in Europe

courses," states Duca. "I can confidently say that things are indeed looking up, so much so that we have taken up one such talented student into our team."

Elsewhere, €6 million is being invested in building Malta's own 'Digital Hub', itself partly funded by the EU.

"The aim is that it will create a cluster; a cluster between three types of digital game players, and I mean both in the sense of players of games and in the sense of stakeholders," Galea says of the local games hub. "These will be companies foreign or local that can take a more or less permanent lease on the Games Hub. Then there will be working stations for smaller companies on a touchdown basis, for example to allow incubation. The third part will be for gamers, so people can come and enjoy gaming and see the industry of gaming. We want those three to work in parallel."

COME TOGETHER

As the Maltese games industry grows, so does the community surrounding it. The country has its own IGDA chapter, co-run by Porsche, and as more studios establish themselves a critical mass is being reached that can only served to bolster the abilities of local teams, and their ability to attract global talent.

"If you take in account that Malta is an island – sooner or later you will stumble upon other game developers, and not the ones you'd expect," explains Filc. "Interestingly we have a good ratio of key people and veterans from the games industry in Malta. The English and German sectors are well represented, with people coming from Bullfrog, Psygnosis, Rockstar, Big Point, EA, Disney or Sony to name a few."

> ***"We see lots of start-ups and small units that operate with an international view, working with freelancers and so on, and they are always improving."***
>
> Nick Porsche, Dorado Games

Such optimism is presently a near universal trait of Malta's studios; most of them being small-to-mid-sized and focused on mobile and web. Between them they are fiercely committed to taking Malta's games development scene above and beyond what outsiders might think is possible on a gathering of islands in the Mediterranean, and they all predict one thing; growth. In a short time span much has been achieved, and it is a trend that appears to be accelerating right now.

"Every time I look a little deeper at the games industry in Malta I discover one or two new companies here that are just starting out," states Porsche. "And that's the major theme here. We see lots of start-ups and small units that operate with an international view, working with freelancers and so on, and they are always improving and growing."

Looking forward, it's hard to predict anything but good things for Malta's ambitions as a games hub, especially considering its size. As Malta Enterprise continues to work with foreign firms looking to set up or invest in the local games industry, it equally supports local entrepreneurship, and is founded on tirelessly enthusiastic teams from the area.

"I am very excited at the future prospects of the Maltese game industry," concludes Caruana. "Despite currently dealing with teething problems, I think we are doing well. Looking at all the hard work and energy being invested in the different projects, it feels like Malta is on the brink of making a big name for itself within the international game development community."

So fascinating is Malta's games making story, *Develop* is set to revisit the islands soon to bring you more on the studios pushing their homeland into the limelight.

Those interested in learning more about the nation's games industry can start by contacting Malta Enterprise, which will undoubtedly be happy to help. ■

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INDUSTRY EXCELLENCE AWARDS 2013

The creative gamble

Making a good game doesn't always mean making a successful game. InnoGames' **Florian Schwarzer** takes a fresh look at managing creative risk

Designing a game can sometimes feel like a roll of the dice in terms of its potential to succeed. Illustration by Emmanuel Malin

HERE'S A NIGHTMARE: Build the best team you can, work hard for two straight years, release a well-crafted game – and watch it fail in the market.

Here's the crazy thing: We work in an industry where that nightmare comes true somewhere every day.

Surprisingly, we don't talk about this very often. Even those of us who carry 'business responsibility' over our games seem to avoid the topic. There's valuable discussion of development processes or leadership strategies, but little time is spent on how to deal with the great volatility of our products. Often, you'll get the impression that we're improving at releasing games on time – but not at ensuring their success.

Can it be that this is because what is at the heart of a successful game is radically different from what makes or breaks other software? For a long time, our project management has looked to IT for its cues, and what we learned from there has enhanced our way of making games. Still, I would argue that there are limits; challenges we have to face that other software managers will never see. Most of them start with two words: game design.

THE SMALL DIFFERENCE

Games try to entertain. This sets us apart from traditional software, like eshops. It also means that we run the same risk as any movie or novel: Our audience might just not find the game appealing. Researchers call this 'creative risk'.

As managers, we usually think of risks as threats to be minimised, or, in the worst case, mitigated. One has to wonder: Is the same possible for the risk of people not having fun?

Fundamentally, a big part of what makes something entertaining is down to curiosity. We like new things. This will be news to nobody – pretty much every game tries to offer some degree of novelty to its players. We search, we build, we advertise fresh new features, whether in an experimental title, or a sequel.

> ***"What may seem original to me, can feel trite to you. Even individually, it can be very difficult to predict whether a game will meet our tastes."***

ON GREAT GAMBLES

There's a problem, of course: What may seem original to me, can feel trite to you. Even individually, it can be very difficult to predict whether a game will meet our tastes before we try it. For a whole audience, it becomes effectively incalculable. Just consider how often century-old Hollywood gets it wrong.

Intuitively, this means that it's a bad idea to take a lot of creative risks. After all, if we release a product that's different from anything that's come before, there's a good chance it'll miss everyone's tastes, right?

True, but our players still really like new stuff. Games like *Portal* or *Wii Sports* show that if you take the risk, and manage to connect to your audience, the reaction can be tremendous. Creative risk is speculative – its outcomes can be negative or positive.

Of course, it is possible to build an entertaining game around a relatively conservative concept. Take *StarCraft II*, a careful extension of a well proven game. Then again, take the guitar game genre. There, we have a group of very well executed titles that got too conservative – and saw their audience move on. Taking no creative risks is a risk, too.

In the end, no matter what kind of game you build and how well you build it, all you get is a roll of the dice. The game's USPs, the very things that can make it succeed, will carry the greatest, most central risks. Accordingly, there's nothing we should take more seriously in our plans.

DOES IT WORK?

Obviously, if we want to help our game designers deal with risky features, we should help evaluate them. Just as obviously, it's a good idea to make these features testable as quickly as possible.

The good news here is that every discipline involved in the creation of games has found ▶

Ever ready to play, InnoGames staff also take the pitfalls of creative risk very seriously

its own ways of quickly prototyping and testing ideas. Based on those, it seems pretty easy to set up whole test plans. Say, you start out by testing a paper draft of a new feature, graduate to UI mock-ups, logic prototypes, and eventually release a fleshed-out version on a beta server. Such plans are hugely attractive. They reassure the team and stakeholders. Also, they don't work.

Partially, it's down to time. Way too often does a team invest into elaborate tests, only to discover that there's no room to fix what is broken. Things can get even worse, though: User tests, by their very nature, produce messy data. It's easy to come to rivaling interpretations, and thus solutions. If a major stakeholder subscribes to such a differing view, the game designers may quickly lose control over their own concept.

THE LIMITS OF AGILE

To avoid all this, it seems sensible to integrate large-scale prototyping more tightly into the development process. To my surprise, when I began consulting Agile experts on this, they told me it was a bad idea.

We all know the basic artifacts of Scrum and XP. You've got a backlog, with the most important stuff up top. You've got a sprint, during which a certain amount of stuff is supposed to get done. You've got a working increment, which grows sprint by sprint.

What a lot of us miss is that, as far as 'traditional' Agile is concerned, that's it. No milestones, no gates. After the first few weeks, the most important stuff is in. Then, with every sprint, the team will be able to release something better. Following that logic, it's a waste to spend a sprint building a prototype that may get discarded or even lead to a rework of stuff that's already done. Setting up whole plans full of that? That's missing the point.

For B2B application development, the environment Agile was built for, that's true. There, it is possible to ensure that what is at the top of the backlog is also the most valuable for the user. In games dev, that's the very thing we often can't be sure about.

> ***"It's always possible that what sounded fun on paper doesn't really work out. Pressing on nonetheless – now that's inexcusable."***

THE ROOT CAUSE

What this means is that to accommodate the creative risks of our games, we must tailor our processes in ways unique to our field. We don't know whether our most central features are valuable to the player. We only hope so. To me, those features – and the degree to which they are proven – should drive a project. At the root, this means accepting that each of them will be reworked many times. In my experience, one shouldn't plan with less than 60 per cent of feature-specific contingency here.

More challenging: We have to acknowledge that there will be controversy. Here, it can help to have the game designers prepare while they are defining the features in the first place. Ask them to name ways by which to tell that the feature doesn't work. It provides the designers with a degree of ownership over the tests, and sets a reliable yardstick for any discussion.

Finally, we have to give our stakeholders a fair chance to take influence. For this, it's sensible to set milestones after major tests. There, you will have learned something important about your project. Thus, if necessary, it's the ideal time to discuss changes – whether that means budget extensions, scope adjustments, or the dreaded cancellation.

That's another thing we don't talk about. But if we take creative risk seriously, it's a step we should always consider. It's always possible that what sounded fun on paper doesn't really work out. Pressing on nonetheless – now that's inexcusable. ■

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Florian Schwarzer is producer for in-house and third-party game projects at German free-to-play developer InnoGames, and specialises in holistic project management and virtual team leading.

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The President of the United Saints would like to **Congratulate** this years winners at the Develop Awards

Stand of hope and glory

At this year's Gamescom, trade body UKIE is putting on its biggest show of UK talent yet seen at what is set to be one of the pivotal games events of the year. **Will Freeman** considers the merits and aims of the UK Games Pavilion

UKIE'S UK 42

At the time of writing, the 42 games companies with a presence at UKIE's Gamescom UK Pavilion are:

Atomicom
Born Ready Games
Dead Good Media
Drop Dead Interactive
Exient
Fat Pebble
Fayju
Fireband Games
Focus Multimedia
Four Door Lemon
GamesAnalytics
GameSparks
GlobalStep
IT World Services
Kempt
Kuju Entertainment
Marmalade
Mastertronic Group
MPG Universal
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Remode Studios
Revolution Software
Rie Studios
Ripstone
Rising Star Games
Scottish Development Int (STI)
Secret Sauce
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Team17
Testronic
Universally Speaking
Venatus Media
Vogue Distribution

THIS YEAR'S GAMESCOM is to be the biggest in the event's five-year history, making it one of the most significant gatherings on the global games industry calendar.

Coupled with sister event GDC Europe, Gamescom today jostles with E3 for status; something unimaginable when the conference replaced Leipzig's Games Convention all those years ago. Some of you may even be reading this as you stand in Gamescom's throbbing halls. Look around you, and it's hard to argue that the show is not rising to the very top of the food chain of industry events. Bolstered by the activity around PlayStation 4 and Xbox One, Gamescom is for its 2013 iteration welcoming over 600 companies from 40 countries. 275,000 visitors are expected to attend the event, including some 24,500 from within the games industry. And this year UK trade association UKIE is taking a bigger-than-ever realisation of its UK Games Pavilion to Gamescom, so as to promote the diversity and strength of its homeland's games sector.

> ***"We are delighted to be supporting this campaign highlighting the UK as a destination for innovation and creativity."***
>
> Sam Collins, UKIE

ALL AROUND THE WORLD

Previously the UKIE Games Pavilion has occupied floor space at Parisian show Game Connection, San Francisco's GDC, and former Gamescom gatherings. As with every year previously, for 2013 it will offer a base for UK studios in Gamescom's Business Area, which serves as the beating heart of the expo's industry element. For 2013 some 40 games companies have a presence at the UK Games Pavilion, which showcases the diversity and quality of titles made in the UK.

Those involved will be supported with networking and promotional opportunities, some having already received help from UK government's Trade & Investment department, which assists UK games businesses in attending overseas trade shows and developing international business links.

"This means that companies can access competitively priced exhibitor packages from UKIE, giving them a hassle free and cheaper solution than if they went alone," explains Sam Collins, head of commercial at UKIE. "Also, as the appointed partner for UKTI, UKIE can access grants for UK businesses which, in some cases, means they can secure exhibitor space for free. This means that we've saved UK games businesses £45,000 in exhibiting costs on the UK stand at Gamescom."

Glance at the list of companies involved (*see panel: UKIE's UK 42*), and you'll notice developers, outsourcing specialists, tech outfits, publishers, service providers, recruiters, distributors and legal firms. It's an impressive rostrum, and one that demonstrates that the United Kingdom remains home to a diverse range of companies within the games sector, from youthful start-ups to industry legends.

WHY VISIT?

Of course, Gamescom is about more than 42 companies. But the rest of the conference's thousands of industry visitors would do well to visit the UK Games Pavilion, where they can network and do business with many of the United Kingdom's industry stars.

"Anyone is welcome to visit the stand, which will be fully managed by UKIE staff," says Collins. "And make sure that you come along to our networking drinks receptions on the stand every evening, courtesy of UKTI and Scottish Development International."

He later adds: "UKIE staff will be on hand to talk about future overseas trade events and how you can get involved.

"And UKTI representatives will be on the stand to discuss specific overseas trade support. And finally, enjoy a free drink and conversation with other like minded businesses at our daily drinks receptions."

The UK Games Pavilion itself will be in Business Hall 4.2, a central location free from the teeming crowds of public attendees, at stand number A018-B019.

"Ours will be the stand covered in the highly visible GREAT campaign livery," offers Collins. "We are delighted to be supporting this international trade campaign highlighting the UK as a destination place for innovation, technology and creativity."

And based on last year's UK Pavilion at Gamescom, draped as it was in Union Jacks and equipped with free jam scones, you can also expect plenty of character and a bit of fun. Certainly, for anybody passing through the Business Hall it should prove an essential calling point. ■

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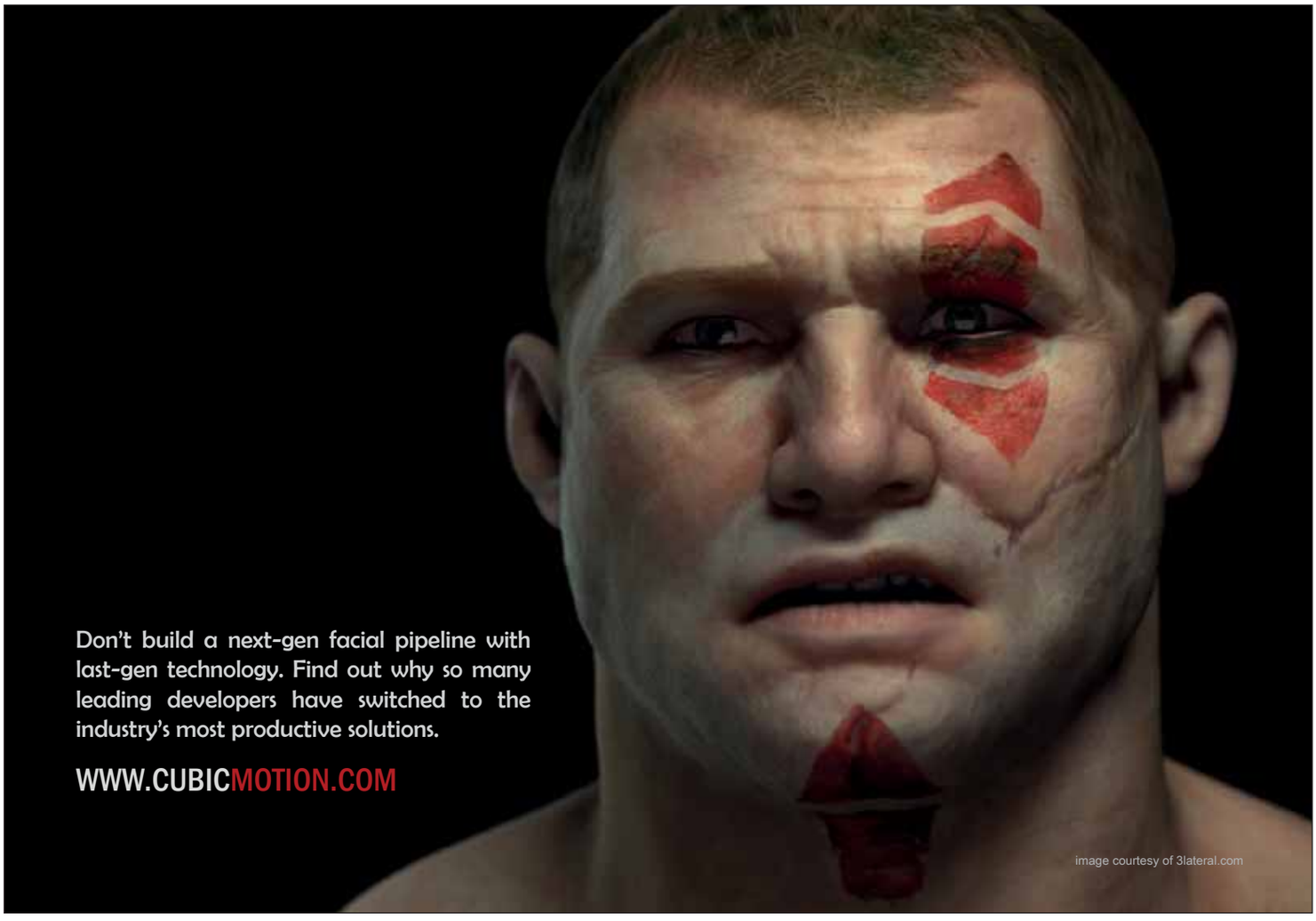
Sam Collins (above) says UKIE is saving UK studios thousands of pounds in exhibitor fees by clubbing together for its all-star showcase at Gamescom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Interview: Xbox One's aural power

Vicon's head start

The mo-cap giant introduces its new head-mounted facial animation rig Cara, p54

Workflows and pipelines investigated p57

Geomerics on lighting The Bureau p67

The new face of mo-cap

Meet Vicon's new head-mounted facial capture rig Cara. **Will Freeman** asks Vicon and Ninja Theory what it means for games

Cara in action, with its four camera's capturing every muscle movement as 3D data

VICON HAS UNVEILED a new piece of hardware it hopes will revolutionise motion capture in games and beyond.

Keen to learn more, *Develop* caught up with Vicon's hardware development manager David Reynolds, and Stuart Adcock, technical art director at Ninja Theory, whose expertise in full performance capture makes him well qualified to offer a developer's eye view of the hardware's debut.

What makes Cara so distinct as a pier of head-mounted motion capture hardware?
David Reynolds: The real point with Cara is that it is designed for high-performance full motion capture in a way that is slightly different from the traditional approach of using larger, more expensive multi-camera systems with optically-based reflective markers.

Typically, in the past you'd have these very expensive systems to capture body markers and face markers. And those approaches have limitations beyond just the cost and complexity; things like line of sight. So people have been building their own prototype systems for facial capture using head mounted systems for some time now, often with a single camera giving 2D output.

Cara is about addressing the market-wide need for a solution of high quality head-mounted hardware that controls software and gives users 3D. It's important that it's a full solution – not just for those working at the biggest studio – but for all sizes really.

So this high-end hardware really is in reach of a range of studios?
Reynolds: Yes. I really think that's the case because it offers such a complete solution, and because there's a relatively small investment in terms of cost and in terms of infrastructure; you get everything in one box, can lift off the lid, plug it in and be up and running in an hour.

> ***"Cara is about addressing the need across the market for a solution of high quality hardware that gives users 3D."***
>
> David Reynolds, Vicon

How long has Cara been in development at Vicon? How did the project come to be?
Reynolds: It's actually been a fair while. We started with a prototype system called the HMC in about 2008 for one customer, ImageMovers Digital, and it was used in their *A Christmas Carol* movie, and then the equipment went to Digital Domain for *Tron Legacy*, and it saw use in a few computer games and so on. After a while we could see it was a successful product, but it wasn't a full release product, and there were still limitations with the data then, and a lot of post-processing was needed. At that point we decided to take our time and develop it into what it is today.

And what is Ninja Theory's interest here?
Stuart Adcock: In terms of Cara, while Ninja Theory has not used it as of yet, at the same time we have taken the journey of going down the route of developing a lot of our own tech of this kind.

I think it's fair to say we're one of the main games companies pioneering this kind of approach, starting with *Heavenly Sword* and taking it right up to today. Motion capture and full performance capture is one of the main pillars of our studio, and we've invested a lot of time in that space.

We've done a lot of R&D in terms of facial solvers that interpret the data captured to allow us to give our characters expression, and that's been needed as until now the only option really has been using single – and therefore 2D – cameras. Two-dimensional data in that context isn't that good in terms of giving expression and character, meaning you have to do a lot of analysis of data and mathematics to best fit 2D data and predict the right Z-depths.

We've always managed to get really good results that way, but it takes a huge investment of effort. It's worth it though, as with head-mounted cameras you don't lose

Ninja Theory's Stuart Adcock (left) and David Reynolds of Vicon

the face when actor's look down or move close together, and you don't have to have the density of external cameras.

Head-mounted systems allow you to do much more in the volume with more people, and we embraced that in *DmC*. But the chance to work with 3D data in that way is a huge opportunity for people making games.

And why in particular is 3D so important in terms of facial capture data?
Adcock: The main limitation of most head-mounted cameras to date is that they've been single-camera, two-dimensional images, and so you've needed more bespoke software. And it seems Cara's targeting a broader target market.

What it provides is easier to understand, in that the captured 3D data better represents the 3D form of the face. Mathematically solving based on 2D data is more limited.

And 3D opens up more opportunities of what you can do with the captured data. Certainly, one goal for us is that if we can start using genuine 3D data, it can be like the old days of multiple cameras, but without the restrictions of coverage and application problems and some of the other restrictions of reflective markers.

How do you see that impacting the games people play?
Adcock: I can only really speak in terms of Ninja Theory, but our goals have always been to try not to draw a player out of a game's world too much. We often tell stories with characters, and we feel the best way to maintain character and give good character progression and arc is to really embrace working with actors. The best way to do that is to try and capture every nuance you can of an actor's performance. Going forward with games, that's going to become more normal, and things like Cara could be part of that.

> ***"What it provides is easier to understand, in that the captured 3D data better represents the 3D form of the face."***
>
> Stuart Adcock, Ninja Theory

You mention actors. How have you tried to make sure that Cara's form won't intrude too much on an actor's freedom to perform?
Reynolds: Certainly, Vicon took on the challenge of not just providing the electronics and the technology, but of designing the head-rig in a way that balances comfort with stability. It was a significant challenge, and that's part of why we've been developing this for five years. You want to hold the frame as still as possible, so the movement of the camera in relation to the face is kept to a minimum. But the best way of doing that is probably to clamp it on to the point that is uncomfortable.

Then there's robustness to think about, and the designing of a frame that will fit a range of head sizes and shapes.

When we've seen studios create their own head-rig, we've often seen them build a bespoke head unit, almost shrink wrapped to the head, but that can be time-consuming to put on and hard to use with more than one performer. So there were a lot of challenges in that regard, but we've worked hard to overcome them.

And Cara will integrate with almost any existing mo-cap environment, regardless of hardware?
Reynolds: We decided that we wanted to make a system users could dip in and out of wherever they want.

So, if you have a full Vicon system, it will work very nicely, but if you don't have a Vicon set-up it will still work very well, and you could even use it without the rest of the motion capture system, and it works indoors or outdoors or anywhere you want.

Ultimately, the data you get out of it is something you can feed into the world of gaming relatively easily. ■
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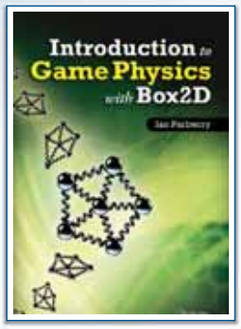

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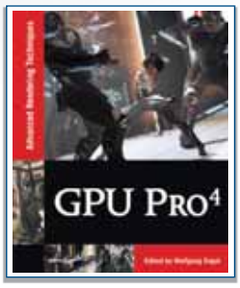

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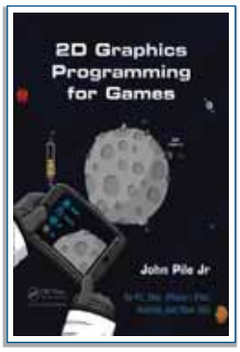

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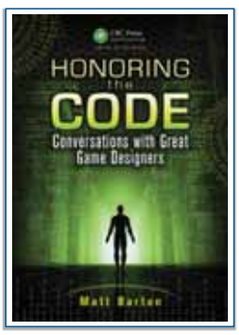

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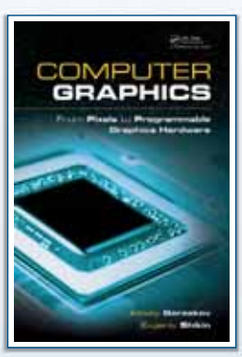

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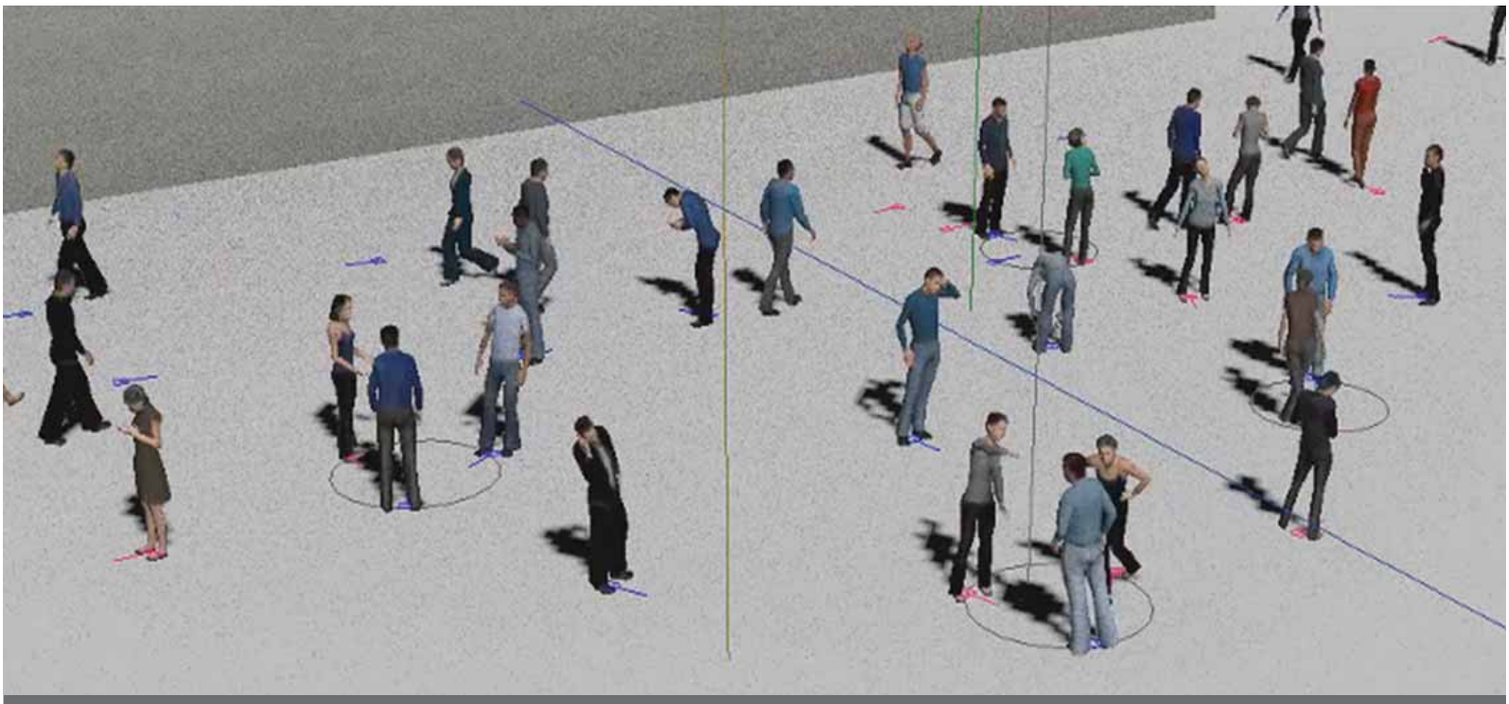


Pipe dreams

Keeping track of your day-to-day progress in games development is a job unto itself. **Aaron Lee** delves into the details to find out about the technologies and practices that are simplifying project pipelines

GAMES DEVELOPERS CAN often be found discussing how they go about structuring their teams and integrating their pipelines to maintain the technically robust and creative atmosphere needed to craft games.

Pinning down the secret to a good pipeline is like trying to make the perfect lunch menu for a party: there's more than one way to go about it, and what works for some won't work for others.

That said, over the successive generations, standardised practices and structures have taken shape to help make the production process more effective for all of the individuals and groups involved. And those at the forefront of these essential technologies tell us that, even as games are becoming more complex and the production process more disparate, pipelines are evolving to meet the herculean challenge of games development head-on.

START AT THE BEGINNING

Speak to the firms behind the tools and technology of production, and you'll find that the definition of a pipeline, and indeed its specific purpose, varies – which is surprising for a sector that is already caught between increasingly scant shades of grey.

For freelance designer and producer Jurie Horneman, for example, the core of any pipeline is about integration.

"What is unique about games is the number and diversity of disciplines that have to work together: code, visual arts, animation, sound effects, music, architecture for level design, writing, game design, the list goes on. This goes beyond what is required to, say, make a movie," Horneman tells *Develop*. "What counts is the final experience for the player. All the work in all the disciplines involved in making a game has to come together to create one experience, and that experience should be seamless.

"However, this is difficult. It's easy to go, 'well, the engine is there', or 'hey, I've finished my textures', but for a developer's work to be really 'done' it needs to work together with everything else, and create a magical experience for the player. Even experienced developers can completely ignore the essential step of integration; of making everything come together."

> ***"A single pipeline needs to allow developers to develop high quality assets, while letting them deploy to various platforms."***
>
> Greg Castle, Autodesk

Time and again, game developers hit rocky waters due to poor pipelines and planning. The specifics are often fuzzy, but the sagas are well known: *Too Human*, *Star Wars: The Old Republic* and *Final Fantasy XIV* to name but a few. And those are just the ones that made it out the door.

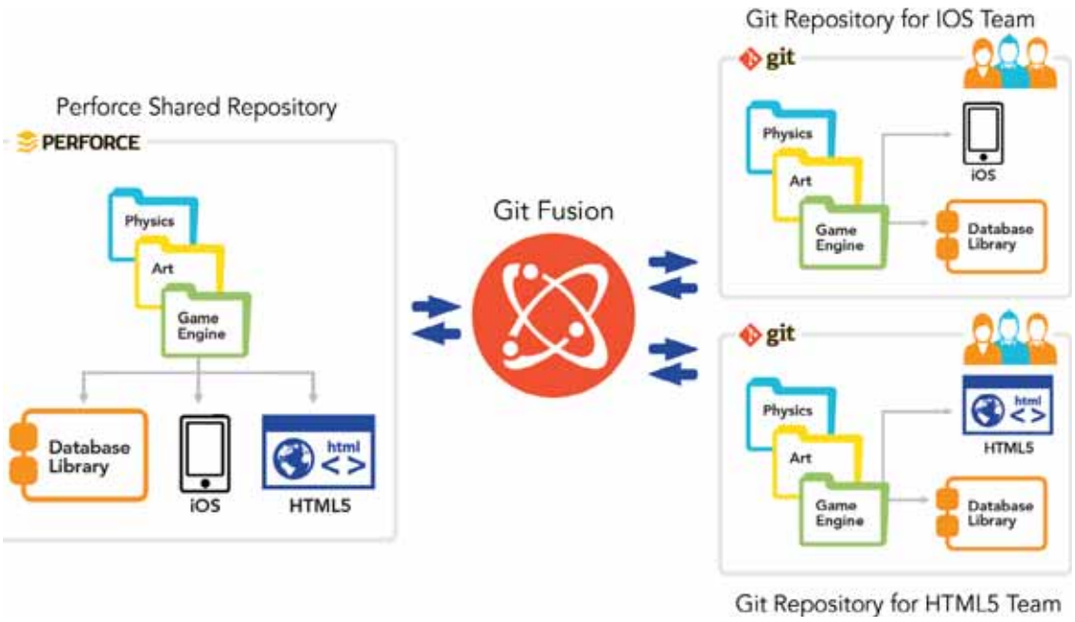
Generally, a principal pipeline will begin with asset creation and asset collection. These are the raw materials that go in to form the foundations of a game, the things players will see and hear and the starting point for generating a sense of character within the world. This ends with runtime; finished sequences where all of the pieces operate in harmony to produce the game experience.

"It is really pipelines, plural, as there are many paths which overlap, branch, loop, are short, long and so on," offers Andrew Bowell, head of product management at Havok.

He tells us that Havok, which is behind game middleware that has become a staple in the console and PC space, considers the pipeline to be the path that data travels from the hands of the creators, be it an artist working in Maya, a designer working in a level editor or a programmer working in Visual Studio, right through to executing in the game. But that's just for a single platform. These days, developers want and often need to be on many more.

"Many teams do not have the time to devote to developing exclusively for one platform, so pipelines need to be so many things at once: flexible, efficient and full-featured, to make the most use out of created assets. A single pipeline needs to allow developers to develop high quality assets, while giving them the ability to deploy them to various platforms," explains Autodesk's senior manager of product marketing Greg ▶

As games become more complex with more characters, as seen in the Autodesk tech above, there is more pressure on pipelines than ever before. Fortunately, the likes of Havoks' Andrew Bowell (top) and 22Cans' Gary Leach have their eye on the ball



CASE STUDY: PERFORCE

PERFORCE IS A favourite among developers for its cross-compatibility with plug-ins, allowing them to be used with Visual Studio, Eclipse, Photoshop and more. Its core Enterprise Software Version Management software was recently extended with support for Git, new code collaboration tools and a drag-and-drop browser client for less technical users.

An overview of Perforce's Git Fusion workflow (main image) and, above, Autodesk's Greg Castle (top) and freelance designer and producer Jurie Horneman (bottom)

Castle. "Autodesk can efficiently link all the different pieces of the workflow, such as pioneering the standardised FBX format that enables efficient cross-tool production, or providing complete solutions like our Entertainment Creation Suite."

But pipelines are not just about achieving quality as well as platform reach. For Hansoft, the limitation of time is the chief consideration behind its tools.

"Pipelines and workflows are scheduling tools that have been created to deal with the growing complexity of feature and asset production in games development," says Hansoft's senior production expert Oliver Teckert. "Pipelines are used to transparently break down the development process for a feature or asset into its component tasks, be it the creation of a character or the development of a feature which requires several steps to complete. This allows for additional granularity in scheduling out each task, without losing sight of the end goal."

DECENTRALISED DEVELOPMENT

As such, time is the ultimate limitation that games development is bound by. For audio outsourcer OMUK, pipelines exist to bring discipline to the process in order make sure the right materials go into a game from the very beginning.

"There always needs to be a logical process to follow in order to avoid time delays or expensive errors. Pipelines help to define this. It's worth noting that these methods should avoid being restrictive. By all means, deadlines need to be met, but by allowing some freedom within the pipeline, you are sure to end up with a better result," Mark Estdale, managing director at OMUK tells us. "At OMUK, we prefer to be involved with projects as early as possible. That's when we add the most value. Our creativity and experience in dialogue production allow us to spot potential issues and correct these early on in the development cycle."

OMUK is just one of many specialist services firms that cater to the games development industry. These firms are as much a part of the process as the dev studio itself; thus an increasingly big part of pipeline technology is about linking production together across vast distances as development has become more decentralised.

"The large scale adoption of outsourcing has changed pipelines," explains Teckert. "Almost every developer now works with outsourcing studios, mostly for art assets but also for code. This introduces a couple of issues. The first is that every asset or feature that is outsourced needs to be tracked as a line item that is being worked on by the outsourcer, which can be an administrative nightmare. With hundreds or thousands of outsourced items, if this is not done correctly, milestones can be missed and key development time lost due to simple miscommunication.

> ***"A major area of change in the past two years has been the complexity of creating and developing an asset or feature."***
>
> Oliver Teckert, Hansoft

"The second issue is that regular feedback must be provided to the outsourcer during the development process, which means that the process needs to be transparently tracked at a granular, step-by-step level, to ensure that feedback can be given early and often in the production process. This ensures that assets and features are being developed as intended, and changes are communicated clearly. Obviously without pipelines and workflows this can create an administrative nightmare which can significantly impact the quality of the final game, not to mention the cost of producing the final asset or feature."

But scale isn't the only thing impacting these tools.

"The other major area of change in the past two years has been the complexity of creating and developing an asset or feature itself," Teckert continues. "As gaming platforms continue to grow more powerful and developers look to take advantage of that power, developers are creating increasingly complex assets and features. Where once the development of any given asset involved a fairly straightforward process that could be completed by a single team member, the same asset can now requires involvement from several specialists' team members and sub-process pipelines. Areas such as modelling and texturing can have special technical tools that have been introduced into the production process to help speed up some tasks. However, the end result is that several steps in the production process now take longer to accomplish. Trying to track assets across different disciplines and teams has become exponentially more difficult as a result."

AN AGILE AFFECT

The issues that Teckert raises, about asset tracking and cross-compatibility, have been chief in the minds of pipeline technology providers. There are various ways that they are attempting to tackle these challenges at a software level, but, to make real progress, development teams need to have structures in place to work smarter.

'Scrum' and 'Agile' sound more like rugby plays or circus training exercises than team management practices, but they are the means by which teams now organise their workflows.

Agile is a development methodology that focuses on iterative and incremental progress, where needs and solutions evolve through collaboration between cross-discipline teams. Through Scrum, developers work towards common goals in the production process by approaching them flexibly and holistically, as opposed to sequentially in silo-style sub-teams.

"In the past, most studios structured their teams by professional discipline. Some pipelines can be completed within a given discipline, but with the majority of pipelines you are trying to create a fully functional asset or feature. Often this means you need to go ▶

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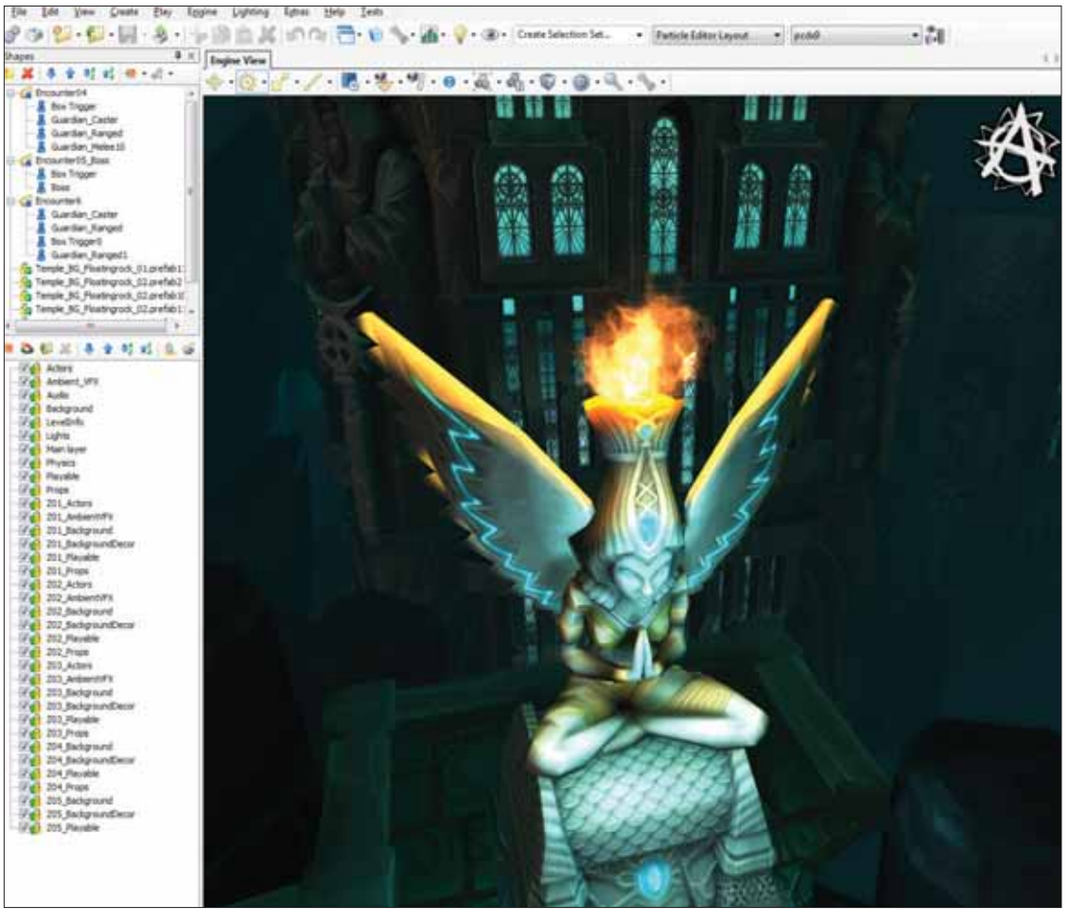

CASE STUDY: HANSOFT

HANSOFT CATERS FOR team collaboration and management in Agile game and software development. The asset pipeline tool in Hansoft can manage complex, parallel and nested flows of art creation in both Agile and scheduling projects, while the workflows tool is used for art sign-offs, quality iterations, user story testing and more. Hansoft recently released a native OS X client and server, making its organisation software far more accessible the huge number of Mac users involved in game creation.

CASE STUDY: AUTODESK

WITH 3DS MAX, Maya, Scaleform and a host of others, Autodesk tools are used by practically every games developer going. Its Entertainment Creation Suite 2014 aims to offers an affordable end-to-end creation and production solution. Recently, it released FBX Review, a free app that enables artists and developers to review 3D art assets from their smartphone, in the hope that it will speed up project iteration for its customers.

Havok's Project Anarchy in action (main image) and, above, OMUK's Mark Estdale (top) and Perforce's Mark Warren (bottom)

outside a discipline group and pull in team members from code, design, art and so on to work together towards the pipeline goal," Hansoft's Teckert says. "Typically, a team working with pipelines is organised into a Scrum group, continuously collaborating while each team member completes their portion of the work before moving to the next task in the pipeline. In this way, the team can address quality at all stages of development and fully understand how their asset or feature is taking shape. This process really engages the team members in the creative process and ensures that there is a constant feedback loop present that emphasises quality."

Perforce's EMEA marketing director Mark Warren explains that the management software maker has adapted its tools to suit Scrum: "Perforce's approach has always been to be as open and flexible in use as possible. For example, until Perforce Streams was introduced, it didn't offer any built-in workflow – and Streams are still completely optional. By keeping things simple, it allowed users to build workflows that work best for them. That's still true today as teams have moved from small start-ups to global businesses, or from long development cycles to Agile, and now into 'Continuous Delivery'. This approach will continue to keep Perforce ready for whatever changes are coming."

Having created mobile games in the form of proof-of-concept titles *Hyperspace Madness* and *Starship Battlement*, Castle says Autodesk now thinks of itself as a developer as well as a tools provider.

"We have first-hand knowledge of the challenges of games development, which better informs our tool development," Castle confirms.

DO IT YOURSELF

But while tools companies such as Autodesk have been dabbling in games development, it helps to have an outside opinion on such software, as Horneman can attest.

He believes that a good workflow has a few simple qualities: you should quickly see the result of your work under realistic conditions; meaning, ideally, that it's running inside the game on the target platform. It is hard to make mistakes or lose work. And, finally, if you do make a mistake, it is easy to find out what it is.

> ***"It is important that all data prepared for game use should be efficient to load and take the least possible resource to render."***
>
> Gary Leach, 22Cans

"This sounds easy, but it can be quite hard. The epitome of this is live editing: you play the game, stop, make some changes, then keep playing. It's one of the big selling points of Unity. But this can be technically complicated, and I've seen big companies waste millions trying to get this right," Horneman says.

"I've also seen workflows where it was easy to lose work: do something in 3ds Max, add some data in a separate, custom tool, then you go back to Max, re-export, and your custom data is gone.

"Or something looks wrong inside the game – too big, no textures, etcetera – and it takes forever to find out which part of your fragile, overly complex pipeline fell over without a peep. I've seen that too."

Sticking with the notion of making the workflow suit the team, Gary Leach, lead game engineer at 22Cans, recently wrote for *Develop Online* about how his studio created a pipeline for *Godus* almost from scratch.

In his view, the tools should fit the people: "One thing I find very important is to ensure that the tools fit the team, not the other way around. Working this way allows us to get the most out of each individual without them having to learn complex new workflows."

ANOTHER WAY

Leach says he prefers not having to do anything specific to structure the team for development. Aside from a few pointers on efficiency and budget, he says he is able to allow them to just get on with things in their own way. While that may go against the grain for some, it is a view that discerning pipeline providers will heed.

The key issue with pipelines is efficiency, Leach says, and particularly runtime efficiency: "User experience is most often directly linked to the speed of a game, both speed of loading and speed of rendering each frame. This makes it very important that all data prepared for game use should be efficient to load and take the least possible resource to render," Leach asserts. "This can be a very platform-dependent task, so preparing efficient data for a console might be a very different process to preparing mobile phone data. What works well for one may be disadvantageous for the other."

This is something that Autodesk's customer success manager Mathieu Mazerolle is well aware of. ▶

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PEGGED FROM PRE-PRODUCTION

WITH ITS SPECIALLY created audio software for games, known as Creative Dialogue Tools, outsourcer OMUK has adapted its technology to be game-centric and merge with a developer's own pipeline with the minimum of effort.

And the outfit's managing director Mark Estdale believes this is what sets it about from other operations.

"CDT is all about bringing the game to life and immersing the actor in the game world at the point of creation. The studio becomes a fluid environment where living context empowers performance. A good actor can easily be set up to score a penalty but what CDT facilitates, for example, is the poetry of a volley – much more complex than taking a penalty. To do this, pre-production is king.

"Pre-production hinges on the pipeline of how we deal with game assets and what we select for use in the studio. CDT enables the instant recall of assets and locks the script to the data so in the studio the script will recall any visual or audio game asset including the recordings that are being created. Click a line and everything is there."

Using accurate and fast data to empower the recording process, Estdale says that its service has the added effect of providing detailed QA at the source, making for a more efficient turnaround.

"For us we want a project in and out with ease and accuracy; factors that developer's prize," he concludes.

Mixamo's tech and Autodesk's 3ds Max working in unison (above right) demonstrates the need for tools to integrate well in pipelines. Above: Autodesk's Mathieu Mazerolle (top) and Hansoft's Oliver Teckert (bottom)

"Today's modern mobile and web game developers are looking for 'write once, deploy anywhere' pipelines: they want to be able to focus on what goes into making their game as fun as possible, and not get hung up on all the technical details of getting their game onto different devices. In order to meet this challenge, pipelines need to be very scalable in terms of adapting to different screen sizes and performance specifications. That's why tools need so much functionality to quickly adapt assets to different environments, such as reducing the number of polygons or re-sampling animation so it uses less memory."

The pipeline makers are making strides to keep up with these tectonic shifts. Autodesk is utilising technologies like the cloud to enable teams all over the world to collaborate on projects. Perforce's commitment to ensure its software cooperates with the latest development tools has been shown with its recent induction to the Unreal Partnership programme. And Hansoft is conversing with its customers to integrate new features, like support for common codebases such as Git.

Yet the challenge for these firms and others is facilitating the near-endless stream of needs and expectations that developers now have.

Managing game assets begins at the time of their creation or collect, and when it comes to audio, OMUK's Estdale feels this specialism is woefully under served by current tools: "For dialogue recording, and specifically recording studios, the design, the workflows and technology developers use are not designed for games. To use them is like banging a round peg into a square hole. But the more complex the production becomes, the more the square hole doesn't work, unless you have the budget and time to adapt the peg and work with what's there. Naughty Dog, for example, uses the traditional route and gets spectacular results. But Naughty Dog's resources are the fantasies of most developers.

"Frustratingly, there is little movement in the audio recording world towards pipeline technology for game dialogue work as we're considered an insignificant market. A few thousand specialist users are of no interest. Consequently, we've done it ourselves with our own technology known as Creative Dialogue Tools," (*see panel above: 'Pegged from pre-production*).

PRODUCTIVITY OVER PERFECTION

Pipelines are pitched as the 'do it all solution', but Estdale's example reflects the relationship that's often at play with such tools in the development process. Adapting existing tools, building their own and leveraging previous experience are things developers are highly proficient at.

Because they have been made to cater to myriad technologies, platforms and team structures, it is a near-impossible feat for pipelines to serve the needs of a studio without adaptation or incident. But this shouldn't faze developers.

> ***"Pipelines need to be very scalable in terms of adapting to different screen sizes and performance specifications."***
>
> Mathieu Mazerolle, Autodesk

On the contrary, Horneman says if a workflow or pipeline isn't working as well as expected, a studio must use its initiative.

"At the start of your project, look at how much content you need to create and how many people you have to do it. You should be doing this anyway for your planning. Then do the maths. If one programmer spends two weeks building a custom tool, or improving an exporter, how many minutes does this save per 3D object, say? Think of how many more iterations you can make, how much faster you can polish.

"If a workflow isn't working as well as you hoped it would, spend time and attention on it. It's that simple, because typically no time is planned for working on pipelines, and too little attention is paid at the team leadership level. Evaluate and measure your workflows, make them someone's responsibility. Get the problems out in the open, knock some heads together and get multidisciplinary people to work on them."

Further to Horneman's points, Leach says that pipelines don't have to be automatic, but they do need to maximise efficiency for every member of staff that interacts with them.

"Keeping things fast, efficient and flexible at the same time is a challenge. Often, aiming for one or two of these will preclude the other. It's important to remember that a little time invested upfront pays dividends every time the pipeline is exercised."

All of the tool providers we spoke to recognise that when it comes to the task of building tools for the games development process, they can't please everyone.

The cake is a lie, and it might be about time you stopping think about that perfect lunch menu.

Hansoft's Teckert puts it best: "Collectively, developers need a tremendous amount of flexibility built into pipeline and workflow systems, so they can tailor them to their needs, which cannot always be easily anticipated. So developers are constantly pushing the boundaries of what today's pipelines and workflows are capable of." ■

CASE STUDY: HAVOK

HAVOK MAKES PRODUCTS spanning much of the games development pipeline. Its Physics tool is widely respected, and the next major update of the software arrived this summer. It offers a suite of tools with its Vision Engine, and earlier this year unleashed Project Anarchy, a free package for creating 3D mobile games on iOS, Android and Tizen.

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KEY RELEASE

Will Freeman looks at Kalydo's new combined tools and services for cloud gaming

What is it? A file-based cloud gaming approach that strives to increase player engagement at a significant saving
Company: Kalydo
www.kalydo.com

Powering games such as MMO Remnant Knights (main), Kalydo's cloud gaming technology is billed as a cost-saving pathway helping studios reach a wider audience

CLOUD GAMING TODAY needs little introduction, even at the consumer level. It is becoming a very ordinary platform for people to access games, but that doesn't mean the technology powering the cloud is at an evolutionary dead end.

Take Kalydo's offering, for example, which recently made itself widely available after a period of close work with selected clients.

Most significantly, Kalydo's approach uses file streaming for games of a 1GB-to-25GB size, unlike OnLive and Gaikai, which are built around pixel sharing technology. Put simply, it means players only need download the elements of the game they are actively using, be they on desktop, in browser or through a social network.

Kalydo's cloud gaming solution purports to have no effect on latency, and can be used to deploy any type of game from first-person shooters to racers on a global scale, and stakes a claim to requiring a minimum of infrastructure for distribution.

"This makes Kalydo's Cloud Gaming infrastructure 200-to-500 times less expensive than pixel streaming," claims Kalydo strategic director Richard van Barneveld. "Kalydo gamers stream in-game content while playing, which is then being cashed on their hard drive. By making the starting package very small we can offer our gamers an 'instant play experience'. The end result is happy gamers that can play a game with just a few clicks – around three – and in less than three minutes, instead of 26 clicks and several hours."

CLOUD CONVERTS

Currently used in 15 titles, which between them share an impressive average of around 85 per cent conversion from registration to launching the game, Kalydo's method also allows for games to proliferate in low bandwidth regions around the world such as China, Indonesia, the Philippines and Russia.

Quite simply, because only a small starter package needs to be downloaded instead of the full client, Kalydo has the potential to make cloud gaming more user friendly and accessible; a benefit that developers of games that rely on the cloud will likely find hugely appealing.

> ***"There is little to no impact on the development process, which is one of the best things about our cloud gaming tech."***
> Richard van Barneveld, Kalydo

Furthermore, the Kalydo file-focused solution effectively eradicates the need for game updates, in that only the relevant content files are streamed to the player, keeping updates at the developer's end of the player-creator relationship.

But what of the responsibility of the developer to make their game applicable for Kalydo's file-sharing approach? Surely it means increased effort on behalf of the studio looking to stream its game to the world?

"There is little to no impact on the development process, which is one of the best things about our cloud gaming technology," offers van Barneveld in response. "We invite developers to make the games however they desire, and as large and advanced as they want, as we have the ability to stream them whatever the size.

"The only thing that a developer has to do different to use Kalydo is upload a new XML into the Kalydo Management Console. Also, Kalydo can be implemented post launch without any problem and very little conversion, as we have done with the majority of our titles."

TOOLING UP

The way developers connect their games with Kalydo's is through a provided SDK that itself is part of a platform five years in the making. The SDK can be used to ready a game for Kalydo's cloud, and includes tools for streaming, compression, and web or desktop launch. The service also includes access to the aforementioned Kalydo Management Console, best thought of as the back office of Kalydos cloud. It is used for deployment of the game, statistics and data, error systems and the Kalydo various support offerings. And, of course, the tech platform is continuously updated and hosted in the cloud.

The service is available through a series of payment options which combine a license fee and per-play session cloud usage cost, or through a custom private cloud solution.

However, as part of the launch, a 30-day free trials if available via the Kalydo website.

"Instead of long discussions or sales pitches we like to invite any game studio to try it for themselves," suggests van Barneveld. "Our first trial was with a Russian company, who were so impressed they integrating their MMO game within three weeks of starting the trial." ■

GEOMERICS SPOTLIGHT

2K Marin discusses its use of Enlighten to help create the stylish 60s feel of its upcoming sci-fi action title The Bureau: XCOM Declassified

The Bureau: XCOM Declassified
Developer: 2K Marin
Platform: PC, PS3, Xbox 360
The Geomerics effect: Enlighten helped give the game its distinct 1960s look and atmosphere
www.thebureau-game.com

THE LATEST TITLE in the *XCOM* franchise has undergone unique public-facing design, narrative, art and technical direction changes. The game first appeared in 2010 as a horror-styled FPS set in the 1950s. It then re-emerged at E3 2011 with a well-crafted 1960s aesthetic as a hybrid-style FPS with third-person shooter aspects.

The more the team at 2K Marin played with the gameplay, the more they were led to a full third-person, squad-based dynamic that resonated with the original *XCOM* titles. The end result is a highly innovative tactical squad-based game where the main character, William Carter, can choose in real-time how to best use his squad to combat an alien invasion.

As *The Bureau: XCOM Declassified* continued to evolve, 2K Marin was especially interested in making sure that the graphics were able to portray the level of detail and dynamism required by the new aesthetic. 2K Marin spent several months researching different technologies and found the perfect balance in Geomerics' Enlighten.

"We were already taking advantage of Unreal Engine 3 for this project, and spent a significant amount of time developing a fully dynamic deferred lighting solution for our direct lighting. We were really interested to see what Geomerics' real-time global illumination technology, Enlighten, could bring to our team. We weren't disappointed," says technical director Carlos Cuello.

ILLUMINATING STUFF

Enlighten comprises a set of tools and runtime technology for delivering real-time global illumination on multiple platforms. Global illumination is the process of light passing through multiple bounces on its way from the source to the observer. Games have developed a number of technologies for solving the first bounce problem in real-time, mostly based on variants of computing a shadow map. But the multiple bounce problem is harder to solve in real-time and many games avoid the problem by baking out lighting into static lightmaps. Enlighten removes the need to bake out lightmaps in advance, producing dynamic lighting that ties together the static and dynamic elements of a scene.

> ***"We were interested to see what Enlighten could bring to our team. We were not disappointed."***
>
> Carlos Cuello, 2K Marin

The 2K Marin team knew that one of the bottlenecks to building levels was the long lighting builds required to generate realistic global illumination. While level layouts could be iterated on quickly, minor modifications to the placements of lights could require an hour-long lighting rebuild. This was in stark contrast to Enlighten, where lights could be moved around at will, providing a true 'what you see is what you get' lighting environment.

"Iteration costs time and resources, but it is key for our project development. We have limited time and resources, but sacrificing iterations was not an option. This is where we have to balance the available resources with technology," reveals senior technical level architect Rinaldo Tjan. "We wanted a fast lighting system that rivalled the baked lighting solution that was integrated with our existing workflow. Although we looked at many different options, none of them met our quality bar like Enlighten did. We also wanted a clean lighting look for *The Bureau's* 1960s architecture and environment, and Enlighten allowed us to achieve that look."

Tjan continues: "We are very careful when evaluating technology for our lighting pipeline. We know what we want and we are not blindsided by every shiny new technology out there. The performance aspect was the most magical thing that we discovered during evaluation. There is the fear of the unknown, and there is the fear of the word 'dynamic', which most of the time translates to 'expensive' in real-time game development. The flexibility Enlighten offers really delivers."

THE END RESULT

On top of the workflow and iteration improvements, going to a dynamic lighting system had a big impact for the player experience in the finished game. Combat elements come alive with moving bullets that affect the environment lighting and Battle Focus UI illuminates the world as you issue commands.

"Changing lighting system is not something that you can take on lightly, but if the payoff means lighting the scene at the speed of light, I think it's worth it," says Tjan.

The end result is a beautiful looking game that catches the atmosphere and style of the 1960s, merging this with interesting gameplay full of dynamic lighting.

"We see lighting as being an absolutely key part of game design going forward into the next generation. We are really proud of what we have achieved with *The Bureau*, particularly after the long journey we took to get to the final game," concludes Cuello. ■
www.geomerics.com

Geomerics' Enlighten at work in The Bureau: XCOM Declassified (main images) and (top-to-bottom) 2K Marin's Carlos Cuello and Rinaldo Tjan

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HAVOK BUZZ

A look at how triple-A studios influenced Havok's new 3D development suite for mobile, Project Anarchy

IN CASE YOU missed that Havok recently unleashed Project Anarchy, it is fairly easy to get up to speed on.

The tech suite offers mobile studios, indies and small teams a wide-ranging toolset centered around a version of Havok's Vision Engine, including significant elements of the company's famed Physics, AI and Animation Studio tools.

And while it might not be conceived for triple-A teams hundreds in number strong, whether they know it or not, it is the development talent behind blockbuster games that have shaped the creative platform that is Project Anarchy.

"Our lineage has always been in triple-A," explains Havok's long-serving head of product management Andrew Bowell. "What that's resulted in is a quite clear offering. Firstly, there's the core of what we do; our runtime. It's that tight, restrained, platform-optimised code that is designed to work on all platforms in the most efficient possible way; that's what drives our Physics, Animation, AI technology and so forth. That's what the triple-A guys demand."

But, in addition to these needs, Bowell says teams also want Havok to provide a thoroughly flexible API.

"They need that core from us, and they need to be able to open it up and tool away," he offers, elaborating on his point. "They need access to source code, and we need to get it out to them in C++, as that's their language of choice. And then we've worked together with those developers to make our tools perfect for the job."

FROM THE TOP

But what does all that have to do with Project Anarchy, squarely aimed as it is at studios and individuals that would unlikely lay claim to being triple-A? The answer, says Bowell, is that that very relationship with large-scale studios has shaped the product Project Anarchy has become, giving mobile developers and their peers a highly refined toolset to work with.

"That kind of collection and aggregation of experience and technology you can only get over time," states Bowell. "What triple-A developers have asked for before is now shipping with Project Anarchy.

"Those big developers have really informed what Project Anarchy is; they've contributed in their own right really. I think the community will quickly appreciate these tools that are quite unique in that they are molded by the people doing big budget games, and are also suited for studios working on the likes of mobile projects."

And, says Bowell, that means in using Project Anarchy developers can learn lessons from the way big studios work. He believes that many of the included features will serve the same roles that they did in the full-scale Havok products, providing developers with solutions to problems, meaning users can quickly embrace triple-A approaches to the universal intricacies of making games.

> ***"What triple-A devs have asked for is now shipping with Project Anarchy. Those devs have really informed what it is."***
>
> Andrew Bowell, Havok

IN THE BLOOD

Furthermore, in the same way Havok has used triple-A studios' input to shape its renowned tools over the past 15 years, today it hopes mobile outfits can contribute to the future feature set of Project Anarchy.

"We're really into just listening to our users," insists Bowell. "And that's our general philosophy across Havok, to the point that a large part of our support network is about working with developers in that way, to offer them what they need."

The next couple of Project Anarchy updates will serve to flesh out the middleware's platform support, adding in the likes of Android-x86 and Tizen support. After that point, the technology's team will be pulling in the input of users, particularly from its community forums.

"We're intrigued to see where our community will take the tool with us," says Bowell, before moving on to the impact Project Anarchy may have on mobile games

"Game worlds used to be static," he offers. "Then they became dynamic, and then destructible. When things got dynamic that's when Havok physics came in and made its name, and later Havok Destruction did the same thing as destruction became a reality.

"Destruction isn't in the box with Project Anarchy, but a form of it is part of our pro version, which you can upgrade to. What we're hoping is to see that those tools impact mobile games and such in the same way they did in the world of triple-A. This will become even more relevant as powerful mobile devices continue to flood the market."

It's a promising foundation for an exciting future, and with Project Anarchy's user community growing with aplomb, there's every chance Bowell's optimistic vision for mobile games will become a reality. ■

Havok's Andrew Bowell (above) says Project Anarchy has the power to bring triple-A experiences, as shown in its 'RPG Demo' (main), to mobile

Download Project Anarchy at **www.projectanarchy.com/download**
Project Anarchy on Twitter: **@project_anarchy**
Project Anarchy on Facebook: **www.facebook.com/havokprojectanarchy**

UPCOMING EVENTS

GDC Europe 2013 and Gamescom 2013
August 19th to 25th
• Sponsored speaking session: Project Anarchy Introduction: First Steps in Creating a Mobile Game with Havok's Free Mobile Engine
• Sponsored speaking session: 'Redefining the MMO: A Case study of how Neowiz CRS Reinvented the MO Genre in their Upcoming Title, Project Black Sheep

CEDEC 2013
August 21st to 23rd
• Sponsored speaking session: Havok Animation Studio and AI: A Winning Combination

Meet up with the Project Anarchy team at these events:
meetings@projectanarchy.com
Full list of upcoming events: **www.projectanarchy.com/events**

UNREAL DIARIES

A look at Unreal Engine 4's approach to materials with physically-based shading

The protagonist in the Infiltrator demo is built using a blend of traditional and layered materials (left). Right: The tricycle on the left contains eight individual material elements, with five unique materials placed within those slots. The one on the right utilises material layers, which blends materials together to produce a single asset that can be applied, shared and reused as needed.

DEVELOPERS ARE INCREASINGLY gravitating toward physically-based shading for high-end film and game production because it allows them to more easily author beautiful, realistic materials that hold up under all sorts of lighting conditions.

Unreal Engine 4's new shading model and materials workflow offers developers a welcome reprieve from the tedious, expensive methods of the past.

Epic's new materials pipeline helps artists leverage the power of physically-based shading in a visually friendly way. Materials are easier to implement than ever before, with support for numerous content creation methods that provide equally stunning results in-engine.

UPCOMING EPIC ATTENDED EVENTS

GDC Europe 2013 and Gamescom 2013
August 19th to 25th
Cologne, Germany

CEDEC 2013
August 21st to 23rd
Yokohama, Japan

PAX Prime 2013
August 30th to September 2nd
Seattle, USA

*Email **licensing@epicgames.com** for appointments and sign up for Epic's newsletter at unrealengine.com.*

NODE TO JOY

UE4 materials take advantage of node-based visual scripting, and the engine is designed so that desired changes can be propagated throughout the game world in real time. Whether a surface is constructed with one material or built via the layered method described below, materials in UE4 are kind to game performance, look fantastic, and give artists total control over aesthetics.

Take the UE4 Infiltrator demonstration, for example. The process Epic's artists used to tailor the protagonist's look greatly deviates from past techniques, particularly in terms of the character's shader and textures that define the soldier's appearance. Instead of using a small number of high-resolution textures for his diffuse, specular, and normal properties, a new layered approach defines the numerous materials that comprise his look.

The Infiltrator character is a blend of many material layers, each defining a generic real-world material type such as fabric, metal, rubber, flesh, and hair. Each layer is built separately and then blended together in the final shader, using texture masks to define which layer is visible on any given portion of his body. Some layers are fairly straightforward, such as the chrome used for items such as buckles, whereas other parts, like his flesh, are much more complex.

Another Infiltrator example is the hover bot vehicle. The base metal is physically defined in one material layer, along with a completely separate paint layer with its own unique physical properties. In the final shader, the paint is opaquely blended over the metal. This blending is more complex than simply placing one texture on top of another because it also blends material properties such as how metallic, specular, or noisy the layers are. A final decal layer adds touches of detail independent of the other layers, allowing for material changes while preserving the vehicle's more subtle, finer features.

This evolution in materials is especially significant because layers can now be painted on at the pixel level, as opposed to the traditional method of applying changes to individual polygons. This can save lots of man hours, especially because UE4 assets can be edited, saved, and shared on the fly.

Since materials can now be mapped per-pixel, artists have the ability to change that mapping at runtime. Consider a tree in which one material defines bark and another defines char as the tree burns. An artist can change the mask at any time, and the char can simply appear where it's needed during gameplay.

BARK UP THE RIGHT TREE

The benefit to this approach is multifold. Since artists can abstract away individual types of materials – for example, tree bark versus wood char – there is no need to overcomplicate a single material network by defining several different types within one material, which is what older methods require. This technique yields materials that are inherently simpler because they can be created faster and are easier to edit down the pipeline, if necessary.

To see examples of the new UE4 materials pipeline, visit **epic.gm/ue4mats**. ■

Epic is hiring! To find out more visit: **epicgames.com/careers**

FOR MORE SUCCESS STORIES, VISIT: UNREALENGINE.COM/SHOWCASE

HEARD ABOUT

John Broomhall quizzes Microsoft's Mark Yeend on Xbox One's audio potential

Xbox One
Company: Microsoft
Released: November 2013
Sound specs: 7.1 surround sound
www.xbox.com/xboxone

IN THE NEXT generation, sound is going to be a major consideration for developers. Mark Yeend, head of audio at Microsoft Studios' Central Media Team explains what developers can expect from Xbox One's audio prowess.

How have you been involved in the development of Xbox One?
Mark Yeend: Xbox One is a great opportunity to innovate, clearly. One of the coolest things for me about this process has been a new unity across all of the Microsoft audio teams. Audio directors and programmers from every Microsoft studio worldwide have opened up to a regular rhythm of sharing progress, wishes, trouble spots, fixes, tips and tricks, and new tech. We're helping each other more than ever.

And the big middleware players are heavily involved too, which is essential.

It's an incredibly powerful box. What I love is that the talented product teams – the dreamers, the makers – have the ear of our platform teams, who are doing a great job. And our central audio team is contributing to every launch title in some way or another.

How do you think game audio will progress and develop on the platform?
I think our E3 reveal was incredibly strong on exclusives and independent titles for launch. On top of our internal games like *Forza Motorsport 5*, *Halo* and others, we're partnering with some of the best studios in the world – Insomniac, Remedy, Crytek – for huge exclusives. For music, my team is raising the overall production values and focusing on memorable themes – I have a mantra that 'music is IP'; shorthand for 'a great melody can differentiate your title and make it more sticky with consumers'. And I fundamentally believe it should be budgeted and scheduled as such.

For dialogue, my team is pushing to improve system designs, pushing new technologies, and trying new in-studio techniques to deliver the best performances.

We're also partnering with writers earlier than ever to develop characters with memorable voice-prints, which also contributes to IP. For sound effects, I think here's an area where many games are achieving cinematic quality, but I'm just as excited about the power of the box bringing quantum leaps in long-term, large-scale dynamic systems. This is the generation where we differentiate ourselves from film while hitting that high quality bar, instead of simply chasing film quality.

What can you say about Xbox One's technical power for audio?
At E3, Marc Whitten did a great job outlining the tech specs. But one of the many new technical pieces I'm excited about is the cloud. Imagine mega-computational horsepower in exchange for some latency. What asset types – or systems – can we push to the cloud? Music can often play with loose sync or no sync; same with ambiences and weather systems. How far can we push our expectations of these kinds of assets, and tap in to the cloud compute to create virtual worlds and also change them over time? What kind of content can be created with an algorithm? The mind boggles.

What's the raison d'etre for a Central Media Team and how are things shaping up?
The two main reasons for certain functions to be centralised are quality and simple financials. The quality of individuals' work improves game after game. We build a reliable brain-trust, our expertise gets deeper, our tasks go faster, and we can see and hear the quality improvements in the final product. We can help all teams solve the commonly repeating problems – we probably just solved it six months ago with another team. The financial benefit is really this kind of economy of scale. For example, certain roles may be common but only needed in a short sprint – centralise those, deploy them to multiple titles per year, it's more cost-effective. Another example is specialised tech muscle – host some of this centrally to support many different dev teams.

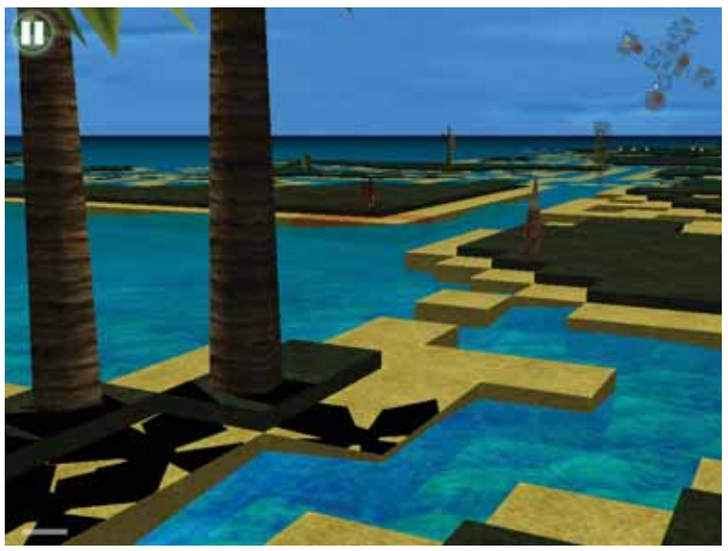
The audio talents in Central Media Content teams are broad and deep. Our art and audio directors do a lot of amazing things that drive quality. In addition to five-and-a-half audio directors (I'm the half, split with management tasks), we have five or six sound supervisors under Kristofor Mellroth designing audio systems and helping the audio directors in various ways. And last year we added Paul Lipson as a central music director and Robert Ridihalgh as a central senior audio programmer. Our Soundlab team and facility are also busy and growing. ■

John Broomhall is a games audio specialist, composer, musician and co-founder of Game Music Connect. **www.johnbroomhall.co.uk**

Mark Yeend (above), head of audio at Microsoft Studios' Central Media Team, says he and his colleagues have upped the overall production values for sound and music on Xbox One (main)

MADE WITH MARMALADE

As new IPs flood into mobile app stores, a different breed of independent developer is using their expertise to bring old-school IPs to new platforms



THE LORDS OF MIDNIGHT
Developer: Mike Singleton and Chris Wild
Platform: Android, BlackBerry, iOS, Mac, Windows
Why Marmalade mattered: Collaborating on a single codebase on both PC and Mac, and developing on differe*nt* platforms made *The Lords of Midnight* possible
www.thelordsofmidnight.com

ARCHIPELAGOS
Developer: AntHill Games
Platform: Android, BlackBerry, iOS
Why Marmalade mattered: Simplifying the cross-platform deployment gave Paul Carruthers more time to focus on producing and promoting his game
www.anthillgames.co.uk

THE SEEMINGLY UNSTOPPABLE rise of the App Store movement over the last five years has democratised games development on almost every level.

Online mobile marketplaces in 2013 are bursting with the creative output of bright-eyed new indie studios hoping to make a killer app that cements their position among the greats of gaming. Thanks to this influx of talent, the consumer has never had such a wide selection of new, mobile-centric IP to choose from. Marmalade is proud to have been behind many of these successes including *Draw Something, Call of Duty: World at War - Zombies*, and more recently indie hits like *Vector*. It's a very good time to be a mobile gamer.

But this democratisation hasn't just benefitted indie upstarts by offering previously inaccessible opportunities to get in front of consumers; it has also given a new lease of life to a generation of classic British games. Marmalade's familiar C++ environment has opened the door for a huge range of classics from the golden age of British computing to be remade for smartphones by their original designers.

GOOD LORDS

Gamers of a certain age will remember the original *The Lords of Midnight* on the ZX Spectrum released in 1984 and developed by the inspirational programmer and designer Mike Singleton. Singleton was working on a remake of *The Lords of Midnight* for smart phones and tablets when he tragically passed away in October 2012. Chris Wild, with whom he was collaborating on the re-release, continued on the project and using Marmalade he reintroduced Singleton's masterpiece to the world late last year.

Chris Wild told us: "Mike Singleton introduced me to Marmalade when we first started work on *The Lords of Midnight* for iOS. We primarily wanted to use it so that we could both develop and target iOS even though he was using Visual Studio on Windows, and I was using XCode on Mac."

Initially the game was developed in Marmalade for cross-platform collaboration rather than deployment. "At that stage, we hadn't even considered cross-platform support of the game."

> ***"With the continuing fragmentation of the smartphone and tablet markets, cross-platform capability has become paramount."***
>
> Paul Carruthers, AntHill Games

And yet, cross-platform support has become one of the game's key features. Wild explains: "Cross-platform support and its ease of implementation was invaluable to us. Not only could we target iOS, but we had Android, BlackBerry PlayBook and BlackBerry versions running within just a couple of hours."

The critically-acclaimed remake of *The Lords of Midnight* is now available not only on the original target iOS, but also on Google Play, BlackBerry World, PC and Mac, with a Windows Phone 8 version also in the works.

GOING LOCO FOR ARCHIPELAGOS

Another classic that has made the leap from retro curio to rebirth on touch screen mobile devices is Paul Carruthers' *Archipelagos*. First released for the Amiga, Atari ST and PC in 1989, *Archipelagos*' 3D first-person engine and surreal atmosphere were revolutionary for the hardware of the time. The game even spawned a 1999 remake for PC.

The most recent reboot for iOS, Android, and BlackBerry was well-received in the press, and Carruthers is positive about the experience of returning to the treasured series using Marmalade: "I think many games clearly belong to a particular era or time period, but *Archipelagos* is unusual and quite timeless, really. With the continuing fragmentation of the smartphone and tablet markets, cross-platform capability has become paramount. I therefore need to base my work on an SDK that is going to keep up with the changing hardware landscape."

Carruthers chooses to take responsibility for the bulk of the work at his studio AntHill Games himself. Aside from art assets and music, all of the design, coding, project management and promotion is handled by him. Having a tool like Marmalade to take the pressure out of targeting multiple platforms is a real help for him. Carruthers adds: "For small companies such as ours, Marmalade has proved an invaluable asset. Through Marmalade the ability to use the same code, art assets and audio assets and produce high quality results across a wide breadth of hardware platforms has become fundamental to our development strategy."

As classic titles like *Archipelagos* and *The Lords of Midnight* continue to find new audiences on mobile platforms through Marmalade, their veteran developers are in a strong position to both draw on their existing successes and to build new experiences. Carruthers is due to release a new cross-platform game imminently, while Chris Wild has recently been teasing screenshots of his remake of *Doomdark's Revenge*, the sequel to *The Lords of Midnight*. Both are sure to be closely watched by gamers of all generations. ■

Marmalade is inviting a select group of C++ developers to join the beta community for its new SDK: Marmalade 7. Experience the power of this uniquely user-friendly and intuitive SDK and claim three months free on any type of licence when you upgrade to Marmalade 7. To find out more email: **M7beta@marmalademail.com**

Congratulations to all winners at this year's Develop Industry Excellence Awards

Perforce were thrilled to be a finalist in the tools category, at this year's Develop Awards, but we were even more thrilled to discover that over 50% of the winners were Perforce customers!

However, imagine our excitement when we analysed all finalists and learnt that **70% of the finalists were using Perforce** to version all their gaming code and binary assets?

You're all winners in our eyes!

For more information, please visit:
info.perforce.com/Gaming-EMEA

Rename Invader Fun

Our retro games t-shirt, with our very own 'Rename Invaders', was a huge hit with everyone who stopped by the Perforce booth. So in the spirit of social networking, why not strike a pose and tweet a picture of someone wearing the t-shirt? Tweet your photos using the hashtag **#PerforceDevelop2013** and the best tweet will receive a special prize.

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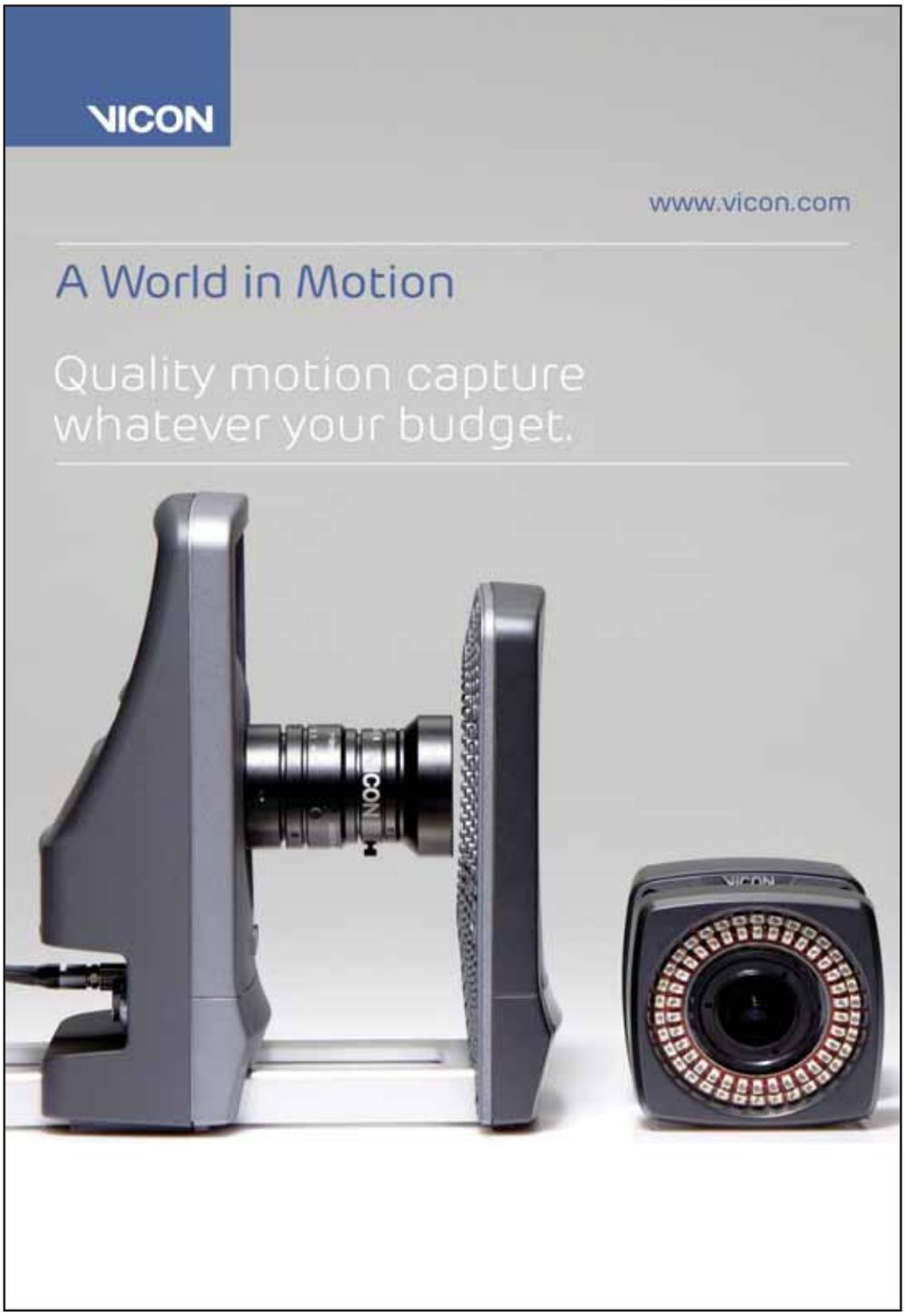


RECRUITER HOT SEAT

EA's Ghost Games is working on the new Need for Speed. Recruiter **Karl Neuman** tells us more about the Swedish outfit

What differentiates Ghost Games from other developers?
While Electronic Arts has many studios around the world, Ghost Games is a unique instalment being one of few start-up studios within the company. Having just celebrated our one year anniversary – having been found in late 2011, we are still in the start-up phase with a team that's constantly changing and adapting with every new hire.

We do offer the opportunity to work for a company with IPs such as *Battlefield*, *Need for Speed*, *Dead Space*, *The Sims*, *Dragon Age*, *Mass Effect*, *FIFA* and *NHL*. But while having a big company such as EA backing us up is a great foundation, the chance for our employees to help form the studio and the environment is an appealing opportunity. Being located in Sweden, the proximity with our award-winning sister-studio DICE in Stockholm makes for extraordinary opportunities to collaborate on our projects.

How many staff are you currently looking to take on?
We're currently looking for an experienced development director with a solid background in programming, as well as software engineers skilled in C++. Our website ghostgames.com is up to date with our current vacancies; all of them are related to our unannounced project.

What perks or privileges are available to staff at your studio?
A modern studio where everyone is a new employee and eager to get to know their new colleagues while at the same time producing a triple-A game.

Being an EA studio, we're working with the latest technology in the industry to produce a stunning product. We're also offering a competitive compensation and benefit package with relocation support, free massages and activities within and outside of the studio, as well as the possibility to play games; lots of games. In addition to that, we're also offering you the chance to live on the beautiful Swedish west coast, in the city of Gothenburg, but still next to the sea with plenty of opportunities to enjoy both city life and the nature in the area.

What should aspiring developers do with their CV to get to an interview?
Make sure to highlight their experience that is of relevance to the positions that we're currently looking to fill, whether it is done by describing it in words or submitting a portfolio or a reel.

Candidates who only send a list of their recent positions without mentioning any details or anything about why they're suitable for the position will not be scheduled for an interview as often. It is also worth mentioning that submitting a CV in neither the company language English – nor the local language – makes it harder to evaluate how suitable the candidate is.

Who is the best interviewee you have ever had you?
I'm always impressed and happy when candidates – especially international candidates that we bring to the studio for interviews – have done their research and do not only reply to the questions that we have, but when they've also

BIO
Name: Karl Neuman
Title: Recruiter
Developer: EA Ghost Games
www.ghostgames.com

"At Ghost, everyone is a games maker and we want them to have opinions."
Karl Neuman,
EA Ghost Games

GET THAT JOB

Development specialists offer advice on how you can bag that career leap

THIS MONTH: GAME DESIGNER

"One of the most crucial abilities of a game designer is to be able to communicate complex ideas to those around you. Often overlooked, idea pitching is an incredibly important skill to develop if you want to work as a game designer. Getting many people to see what you see is a very, very difficult task.

"There are 50 billion ideas out there; the problem is filtering them and making sure you're selecting, developing and communicating the ones that fit. Isolating the elements that really matter and being able to explain why one idea is important for making the game better is very critical.

"As a rule, people generally avoid reading big documents. The fewer words and more pictures you can use, the better. We always seek this skill in new designers we're looking to hire."

Chris Auty,
Game Design Director, Crytek Frankfurt

SIX-SECOND STUDIO SPOTLIGHT

- Quirkat was founded by Mahmoud Khasawneh and Candide Kirk (*pictured*) in 2004
- Khasawneh was previously with interactive TV companies in the UK, and Kirk is a graduate in Computer Systems Engineering
- Its early work was inspired by Arabic culture, but PSN launch titles *Word Blocked* and *Pro Foosball* have helped it achieve international recognition
- Quirkat has offices in London, Dubai and Amman
- Possibly it's most notable distinction is that 80 per cent of its workforce is female
- New recruits include marketing manager Rawan Sha'ban and programmer Ghina Al-Sharif

www.quirkat.com

looked up the interviewers history and are interested in how their story can be applied to themselves. Candidates with a genuine interest and enthusiasm are always a pleasure to interview.

And who was the worst?
I must say that there's no candidate in particular that stands out. However, since one of the reasons of having an interview is to find out more about the candidate, it's always helpful if the person is able to talk about what they've done and about any preferences that they have rather than be happy with answers consisting of one word only. While not everyone is comfortable in the interview situation, which is understandable, it is definitely harder to be convinced that the candidate is walking away from the interview with a good understanding of the role and the studio, if they have a hard time talking about themselves and their expectations.

What advice would you give jobseekers for a successful interview at Ghost Games?
Do your research, play the games applicable for the job and have an opinion about them. At Ghost, everyone is a games maker and we want them to have opinions.

An interview is always more likely to be successful if the candidate comes prepared. This can be shown in many ways, but the most common ones are to read up on Ghost Games and Electronic Arts, having considered what the opportunity would mean to the candidate and be able to describe his or hers experience and why that is relevant, as well as having spent some time to consider which subfields within the area of expertise that is of interest. A general interest and understanding of games is also beneficial for the candidate. And perhaps most important of all: if we offer you an interview, there's a pretty huge chance that you're good at what you do.

Don't be afraid to tell yourself that it's still a good idea to remain humble to the fact that the interviewers have several years of experience in the industry and that they are also very good at what they do.

Also, some candidates might find the interview scary, but know that neither I nor the other people that are conducting the interviews are there to put you in a bad spot – we're there to find out if you can be the next co-worker of ours.

If your studio has recruited talent internationally, what was the process like for your studio and for the applicant?
In the process itself, there aren't a lot of differences in general. The same series of interviews and tests are to be held and in addition to that we're always making sure to bring the candidate, and possibly family as well, for an on-site visit to get to meet our employees and get to know Gothenburg as a city. Anyone that makes the move to Sweden is offered an extensive relocation package in which everything that can make them feel more comfortable at Ghost and in Sweden is included.

NEW STUDIO ALERT!

THE MEN BEHIND Force of Habit have no interested in joining the frolics of triple-A studios.

Director Ashley Gwinnell (*right*) and co-founder Nick Dymond (*left*) met while the former was still in university, but quickly found that they shared a common desire to make their own games.

"I was still studying and he had a real job. It was only after graduating and moving back to Bristol that we started to take the idea seriously. We had similar interests, ideas and areas of games we wanted to explore, and by then had already done a few game jams together. It made sense to team up, so Nick quit his day job as a producer at another games company. He's pretty crazy like that," Gwinnell tells *Develop*.

The first thing the duo did as a company was to enter a funded game jam organised by The Wellcome Trust called Gamify Your PhD. It collaborated with a Bristol-based art and animation duo, Clockwork Cuckoo, honed its skills and came in first place.

Now set up in the Bristol Games Hub, with a handful of other small studios, Force of Habit is currently experimenting with game design ideas. Gwinnell says:

"We don't have a specific area of games that we focus on. The games we've created so far are either very mechanics-driven or they're local multiplayer. We make the kind of games that we'd like to play. If our focus is anything at all, it's on experimenting and following our curiosity."

www.forceofhab.it

MOVERS AND SHAKERS

This month: Microsoft, Headstrong Games, Exient, Savalas Sound and Culture Translate

MICROSOFT Channel 4's online business manager **JEN TOPPING** has joined Microsoft Soho Productions. Taking up the role of business manager for EMEA TV, Topping will work on building new TV content experiences for Xbox hardware. She reports to Soho Productions studio manager Brian Stone.

"I've had a great time at Channel 4 working across lots of different projects, and have learned a huge amount about how technology is changing the way audiences watch and engage with TV programmes," said Topping. "This is such an exciting time to be joining Microsoft with the launch of Xbox One as the new generation all-in-one home entertainment system. I'm looking forward to being part of the team building amazing TV content experiences for Xbox's millions of users."

While at Channel 4, Topping helped launch the media company's 4 on Demand service, a new website and also managed the business for online commissioning across multiplatform, games, product management and digital programme support. She has also worked at the BBC and the British Interactive Media Association.

Topping is the second UK TV exec Microsoft has hired in recent months, with former Channel 5 executive Kate Barne joining in February.

HEADSTRONG GAMES London developer Headstrong Games has added nine new senior and junior members to its staff to move its current projects into full production.

Joining the engineering team are programmer Davide Bertoletti, principal programmer Stelios Michael and associate programmer Django Verbaant**.** Cristina Suarez, Carlo Incandela and Joel Carpenter have come on board as associate 2D artists to bring a high level of artistic skill to the studio.

Bolstering the design team, **LEIGH NICHOLLS** (*pictured*) joins from Creative Assembly as an associate designer and Tamas Ovari comes from Microsoft as a senior designer. Finally Archie Campbell has completed an internship to become associate audio designer.

EXIENT Oxford-based independent developer Exient has hired **SAMANTHA WHALE** as its new community, social and PR manager. She will be looking to expand Exient's web presence on social media and will be responsible for maintaining all media relations as well as engaging with its burgeoning community.

"I'm looking forward to taking on the challenge of building our company's relationship with its community, supporting and fostering the people around it and in turn building a stronger culture within the company," Whale told *Develop*.

Before joining Exient, Whale worked at Gamania Digital Entertainment on the online title *Soul Captor*.

She got her start in the industry as a professional gamer competing in worldwide tournaments and even achieving a Guinness World Record in *Halo 3*. From there, she became involved in community and events management as well as PR for several different game clans including PMS Clan, Team Dignitas and Western Wolves.

SAVALAS SOUND Scottish audio house Savalas Sound has hired two new recruits to strengthen its production team. **PAUL MCARTHUR** (*left*) joins as lead sound designer on *Halo 4: Spartan Ops* and is currently working on two new projects with regular collaborators, Axis Animation.

McArthur started in music composition in both a live and studio environment. His focus switched to sound design in his last year of university which led him to the MDs in Sound for the Moving Image at Digital Design Studio at the Glasgow School of Art.

Meanwhile, new hire **LESLIE LIU** (*right*) is currently recording foley for a major launch trailer.

Savalas Sound MD Kahl Henderson commented: "We are all delighted to welcome both Paul and Leslie to our ranks here in our Glasgow premises. They join us at what is an exciting time for Savalas Sound as we continue creating leading edge sound content in a highly competitive and creative industry."

CULTURE TRANSLATE German QA and localisation firm Culture Translate has hired **ANN HURLEY** as business development manager. Hurley will be tasked with expanding the firm's European business.

She has worked in the games industry since 1986 across distribution, publishing, QA and customer support.

Nadine Hartmann, CEO of Culture Translate, added: "We are pleased to welcome Ann Hurley to our passionate, young and dynamic team of localisation professionals.

"As Ann is a highly experienced, energetic, dedicated and confident veteran in the games industry, we are sure that she will be a great asset."

Services & Tech Recruiter Hot Seat

Corona Labs' COO **David Rangel** discusses why the nimble tools outfit wants to hear from you

What makes Corona Labs different from other tools companies?
Our flagship product, Corona SDK, has hundreds of thousands of users worldwide, and the platform has been used to publish tens of thousands of mobile apps. Corona SDK stands out as a highly efficient tool for making rich, interactive and high performance 2D mobile apps and games.

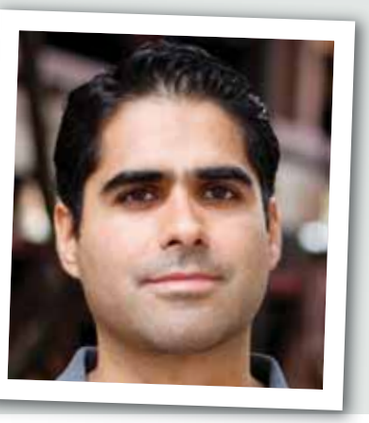
What benefits do you offer staff?
We are a small company, but offer industry standard health, dental, and vision insurance. In addition, we also provide high quality catered lunch each and every day, a very flexible vacation policy and work hours. We pride ourselves in offering a fun work environment, with a diverse and talented team of people. One of the biggest perks however, is that we are at the forefront of mobile, and get to test out the latest, hottest games made with Corona SDK.

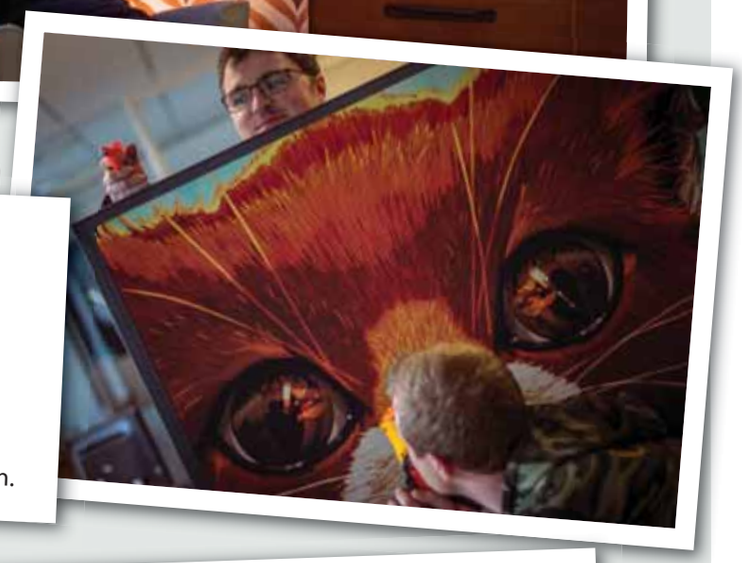
What disciplines are you in need of?
We're most in need of strong Objective-C, Java, C and C++ developers. We develop a cross-platform framework that builds apps for iOS and Android, so we need to be experts of these platforms and the underlying technology. We work with C and C++ at the base level, but also with Objective-C and Java when building for iOS and Android.

What opportunities are there for career progression?
There are ample opportunities for progression, both as our team grows and as we add more functionality to Corona SDK. We expect engineers to contribute to Corona starting on day one, and those contributions are enjoyed by thousands of developers right away through our Daily Builds.

Can you describe some of the skills or personalities you look for in potential employees?
Strong engineering background and experience is a must. A high level of initiative and ownership. And, of course, a fun and pleasant personality.

Why should perspective employees choose a career in tools and middleware development?
The mobile industry is exploding and developers are in need of powerful tools to aid them in their work. Corona SDK provides developers around the globe with an easy to use, powerful solution that makes app development a more enjoyable, time efficient experience. As the market for developer-friendly solutions grows, programmers with a background in middleware development will become even more marketable.
www.coronalabs.com





Boss Alien

Brighton, UK
www.bossalien.com

Somewhere in Brighton, something psychedelic lurks. The studio behind *CSR Racing* has a thing for retro décor. And its own artwork – blown up to huge sizes in some of these photos – hollers for attention.

THIS IS **WHERE WE WORK**

Tarsier Studios

Malmö, Sweden
www.tarsier.se

There is plenty of colour and quirk to be found at the Swedish studio behind *LittleBigPlanet PS Vita*. And canine staff.

SERVICES SPOTLIGHT

This month: **High Score Productions**

HUGH EDWARDS IS confident that his audio outfit High Score Productions has precisely what it takes to give your project the ear-catching sounds it deserves. Operating since 2004, High Score has provided audio – especially voice work and dialogue – to more than 140 titles, from triple-A all the way along to mobile.

"The main reason developers and publishers should come to us as an outsourcing company is that we do 25-plus games a year. The breadth of our experience is huge compared to those people who only work on one title every two years," says Edwards (*far right*), director of High Score. "It's also really important to have a voice director who is actually trained as a voice director, and who isn't the guy who makes the coffee and does gameplay design, etcetera. Voice direction is a skill which is just as important as being a fantastic concept artist or a brilliant core coder – it's a distinct and separate art, and more and more games companies are realising this. This is what we provide – experience, knowledge and skill, combined with passion."

English, FIGS, Japanese, Polish, Russian and other languages are covered by the audio specialist, which is split between voice, music and sound production equally. High Score employs voice directors and project managers to run complete and entirely embodied dialogue-production projects, and also grade eight musicians and heavily experienced sound designers.

High Score has also developed its own suite of tools to run dialogue projects. "Game developers can spend hundreds of thousands of pounds on developing their games, the engines, the graphics and so on," continues Edwards. "But if you don't get the voice right, you can throw it all down the toilet. That's why we pay so much attention to detail, casting and directing, recording, post-production and quality assurance. It's hugely important. Sound is as much a kingpin of gaming today as graphics and gameplay."

The audio production house has done dialogue projects such as *Harry Potter for Kinect* for Warner Bros and *WarThunder* for Gaijin Entertainment. It has worked on *Enslaved* for Ninja Theory, done sports titles such as

A look inside High Score's recording studio in Banbury (above)

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Birds of Steel (above) is just one of dozens of titles High Score has devoted its services to over the years

Beijing Olympics 2008 for Sega and *Moto GP* for Konami, as well as wartime projects like *Birds of Steel*.

"We provide the best possible project management, recording talent and production skills, along with arguably the best voice direction in the country, to ensure that the investments made by the publisher

> ***"The breadth of our experience is huge compared to those people who only work on one title every two years."***
>
> Hugh Edwards, High Score Productions

and the developer are justified and built on, rather than hampered and spoiled. The result is, our clients keep coming back to us," Edwards asserts.

High Score will continue developing its in-house tools to give it the edge technically and financially over its competition. And Edwards is in no doubt that he and his team with keep providing "fantastic" game audio.

"Our service is right for games developers because we are bloody good at our job – we do game audio, and we have the breadth of experience needed to be the leading audio outsourcer in the UK."

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TOOLS SPOTLIGHT

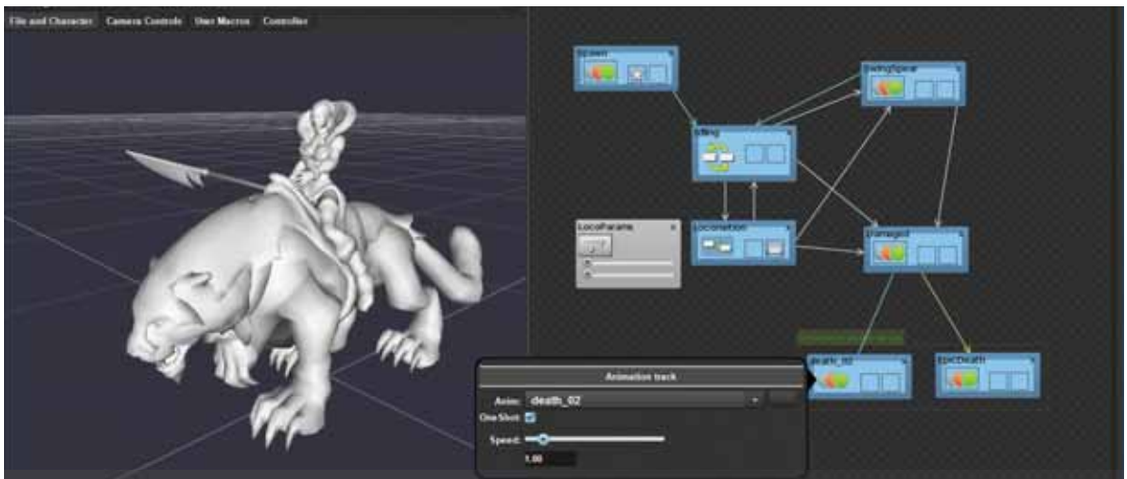
This month: **Rad Game Tools**

RAD GAME TOOLS is probably best know for it's Bink video codec, which is widely used in the games development business. Based Kirkland, Washington, the company was founded in 1988 by Jeff Roberts and Mitch Soule. Rad specialises in tightly focused middleware that is created, supported, and maintained by experienced game coders.

Rad's suite of development tools is encompasses a broad set of programming and production disciplines, and here we focus on just one of them that is currently due for an upgrade.

Granny 3D is Rad's animation and data pipeline SDK. In some sense, it is two products built around a common codebase. Granny is a comprehensive export pipeline for Max, Maya, and XSI, along with a set of powerful tools for optimising game data, and a cross-platform animation SDK for sampling, blending, and manipulating animated characters at runtime.

"The beauty of Granny is that we designed the SDK to fit into your game, rather than requiring you to fit your game to Granny," Dave Moore (*far right*), technical lead for Granny 3D, tells *Develop* of the software that has been used in more than 3,000 games. "You never have to derive from a class hierarchy that's out of your control, you get full source to the library and all of our data formats are open. We give you as much functionality as you want, but never require that you take up pieces that you don't want."



Granny's technical lead Dave Moore is excited for customers to finally start getting their hands on the new additions to the animation software

Granny has been around for over ten years now, but that doesn't mean she's not spry for her age. Some of the recent titles Granny has assisted include *Guild Wars 2*, *Forza Horizon*, *Halo 4*, *Dungeons & Dragons Online*, *Elder Scrolls IV: Oblivion*, *Eve Online*, *Sid Meier's Civilization V*, *Tropico 4*, as well as Bungie's upcoming MMO, *Destiny*.

"In addition, we have a substantial number of clients using Granny just for the export and data pipelines," Moore adds. "This is a great fit for developers that want to update their art pipeline, need DLC or require maintenance after shipping. The Granny exporters are always available as soon as new versions of the Autodesk tools ship, so

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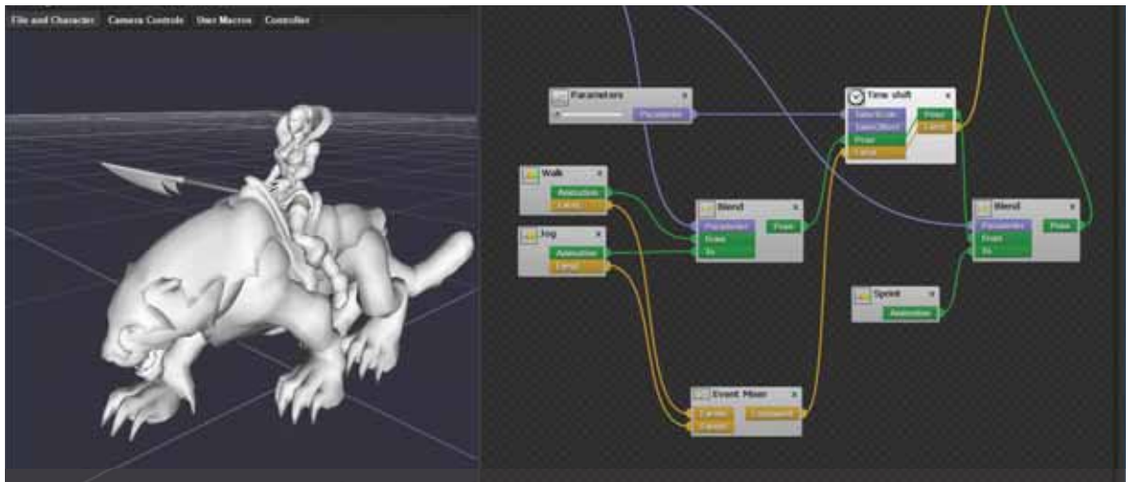

An example of a locomotion event mixer in Granny Animation Studio

"The beauty of Granny is that we designed the SDK to fit into your game, rather than requiring you to fit your game to Granny."
Dave Moore, Rad

the hassle of maintaining the toolchain is substantially reduced."

The largest change in the last year or two has been the release of the Granny Animation Studio, a graphical animation state editor. Moore tells us that it has been in the works for quite a while at this point, so he's really happy to finally have it showing up in customer's games. Artists and animators like that the fact Rad is moving animation blending and transition functionality out to where they can data-drive it, he says. On the code side, the studio and its underlying runtime have been designed to keep the traditional benefits of Granny, speed and customisability, intact.

As the team prepares Granny for the future, Moore is satisfied that its presence in the games developers' arsenal exists because of its ongoing performance: "Granny and Rad have years of history doing what our customers need, and then getting out of the way so they can ship the games they want."

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TRAINING SPOTLIGHT

This month: **Howest University College**

The Level (below) is home to digital arts and entertainment at Howest

Rik Leenknegt, Howest lecturer

HOWEST HAS BEEN voted most entrepreneurial institution of higher education in Flanders by both employers and the government five times in the last eight years. Located in Kortrijk, northern Belgium, this institute offers courses in Game Graphics Production or Development.

"The major difference between other courses and ours is the unique profile our students have when graduating," says director of Digital Arts and Entertainment Rik Leenknegt (*above*). "Most students still graduate with a more traditional art or programming profile. And this is where Howest differs. We compiled our degree with the input of the major players in the international games and interactive media industry. Together with these partners we created a 'technical artist profile' with an expertise in either Game Graphics Production or Game Development."

During the three-year courses, students learn all the skills, techniques, principles and insights to create complete interactive 3D environments. Howest's programme contains both artistic 3D and technical programming courses that also embrace specialisation and foster students' personal development.

The location itself is one that Leenknegt says is an added value. Howest's campuses are situated in Kortrijk and Bruges, the latter being a maze of winding cobbled alleys and romantic canals "where one may imagine themselves to be in medieval times". A unique source of inspiration, Leenknegt maintains. Belgium is also located at the crossroads of Europe, with Paris, London, Cologne and Amsterdam all roughly a two-hour train journey away.

Starting from concept art and a design document, students on the Game Graphics Production pathway are able to translate the graphical style set from an art director into triple-A quality game content. And as games developers, students are given a thorough technical insight into the production pipeline.

Students on the 3D Production and Visual Effects pathway master the workflow from storyboard to finished product. A solid artistic basis and a strong conceptualising ability, combined with a thorough insight in the technicality of the production process of both movies and animation films aims to make Howest students unique within the sector.

Howest attempts to incorporate industry feedback after internships and study visits where possible. Every three years, it commits itself to reviewing the entire curriculum in close cooperation with the industry. It asks for thorough feedback from the main partners that work with its alumni and the key players in the industry.

"It would be crazy to pretend that we know everything. We need the input and expertise from both studios and developers. That was also one of the main reasons why we created an international advisory board: to keep pushing us forward, to guide us and challenge us. We are convinced that education and industry should go hand in hand to determine the right strategy to educate the employees of the future," says Leenknegt.

> ***"We compiled our degree with the input of the major players in the games and interactive media industry."***
>
> Rik Leenknegt, Howest University College

Alumni from Howest now work at 2K, Black Forest Games, Boss Alien, Codeglue, Codemasters, Crytek, Daedalic Entertainment, Eidos, DICE, Fishing Cactus, Guerrilla Games, Kylotonn, Larian, Nitro Games, Rockstar North, Spicy Horse, Splash Damage, Triumph Studios, Ubisoft, Vanguard Games and Wooga. And besides game companies, students have also gone on to work in diverse sectors including media, architectural visualisation, animation, advertising, marketing and visual effects.

Howest is currently in the process of revising its curriculum for the coming year. It has just set up its own spin-off programme, and is currently working on an international Masters and a postgraduate course. In the meantime, Leenknegt says it aims to keep iterating its curriculum to provide the industry with the best possible graduates it can.

"Just like the industry we educate for, we are never standing still. We have just opened our new building called The Level; a unique campus entirely reserved for Digital Arts and Entertainment. In this building, we also have an incubator. The entire second floor is reserved for start-ups, research groups or already existing companies active in the field of games or working with interactive 3D technology," he says. "The goal is, of course, to stimulate our local industry and encourage innovation. These companies can use our facilities (mo-cap, green key, audio studio, conference room) and work together with our students. We are convinced that industry and education should go hand in hand."

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Belgium

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E: rik.leenknegt@howest.be
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Below: A set of visual effects renders by Howest students

Above: A 3D character model created by a Howest games student

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THE FAQ PAGE: JEREMY GAFFNEY

Develop grills respected figures from the global games industry

Turbine founder Jeremy Gaffney has a collection like none other, with a Chinese repeating crossbow and art of the most exclusive variety

Who are you and what do you do?
I'm Jeremy Gaffney, executive producer for Carbine Studios.

What are you working on right now?
We're working on *Wildstar*, which currently is the next great MMO, if we get our shtick together and do our stuff right.

What was the first game that you ever worked on?
It was *Asheron's Call*. I founded Turbine in 1993, and we worked on that game. That was a labour of love for quite a long while, but actually we did that deciding it was our way of getting into the games industry. We figured we'd start a company, fail – as that's what new companies did – and get hired by bigger companies within a year. But we never failed and just kept on going.

What was the first game you played?
Oh God. That was probably *Zork*, and yes, I knew I enjoyed it. I enjoyed games so much that I knew I wanted to make games from the age of seven.

What was the most recent game you played, and did you enjoy it?
I've been playing *Civilization V* up to the moment to keep up for the new expansion pack coming out. Actually, I've discovered that expansion pack comes out four days later here in Europe, and that's killing me. I feel the pain of being European.

What's your favourite game ever?
There's too many I love, but if I was stuck with one, it would be the original *XCom*. It was such a brilliant combo of sim-style base building, squad level combat and a cool storyline unleashed through combat. Who else did all that in the 90s, and did it all well?

How many hours a week do you spend playing video games?
An embarrassing amount. My wife [watching the interview take place] isn't allowed to grimace when I say this. I guess 30 hours or so still.

What area of the games industry today needs more investment?
Innovation. The problem with investment of the financial kind is the more money spent the more scary it can be to screw up an opportunity and waste it. That leads to clone games. Ironically, the one thing that never works is a fricking clone game.

What do you enjoy most about the industry?
Oh, the short hours and relaxing work cycle, and all the lying around. Not really; it's the doing what you love surrounded by people doing what they love. And you'd have to be insane to do this if you didn't love it.

What disappoints you most about the games industry today?
Done wrong, the work can be soul crippling, because you have to invest your heart and soul in this stuff. Sometimes the investment of self isn't rewarded.

What project that you've worked on was your favourite to be involved with?
I'd probably say *City of Heroes*. That was a really fun game with great developers and a great development cycle.

What game that you were not involved with would you most liked to have worked on?
That's a grand question. I always want to work on what will be the biggest game on the planet, so maybe *World of Warcraft*. But I want to be working on the game that beats the biggest game on the planet.

Which developers do you most admire?
There's a few of them actually. I like those willing to innovate and take chances, so I love a lot of the stuff that Bungie has done recently, I love Riot Games full-on commitment, and Blizzard has done such a great job of making so many great games.

What hobbies, collections or interests do you have outside of video games?
I collect esoteric stuff, so I have everything from a Chinese repeating crossbow to a painting by a monk where he dedicated his life to one single painting. Our house is filled with stuff where people doing what they love is also their work, so that's my collection, in a way.

What is your favourite book, movie, TV show and album of all time?
For book, I'd say *Ender's Game* by Orson Scott Card. For movie, it would be original *Star Wars* or *The Godfather*; could I merge the two into some Jabba the Hutt mob drama? TV show? I'm loving *Breaking Bad*, and it's never 'jumped the shark'. And album is tough; Peter Gabriel's *So*, I think.

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